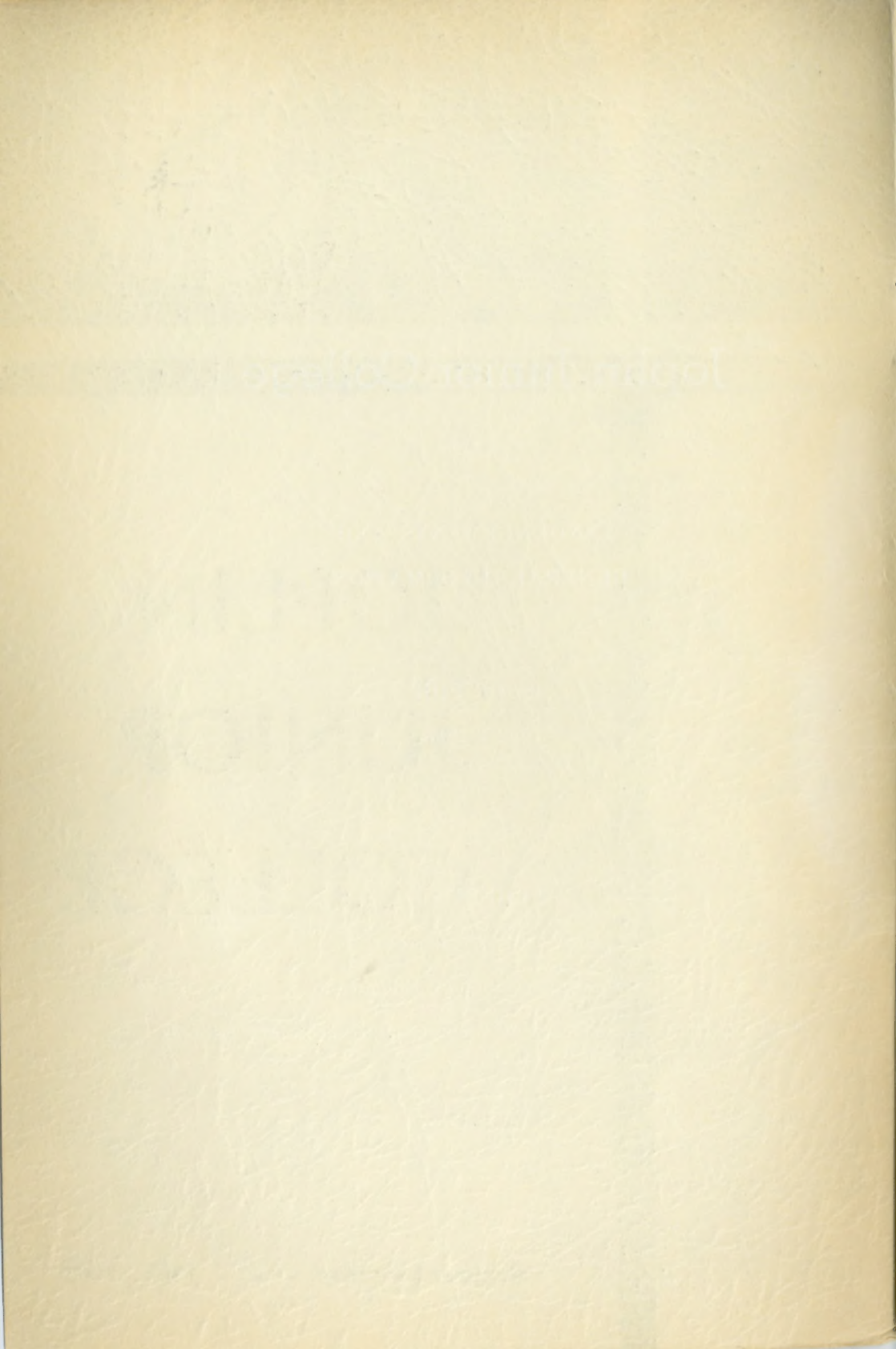


OLD
REGISTERED
MO. SOUTHERN COLLEGE
JOPLIN

JOPLIN JUNIOR COLLEGE

Announcements - - - 1962 - 1963



Joplin Junior College

**ANNOUNCEMENTS AND
GENERAL INFORMATION**

**ISSUE FOR
1962 - 1963**

ACCREDITED

University of Missouri

State Department of Education

North Central Association of Colleges and Secondary Schools

MEMBERSHIPS

American Association of Junior Colleges

American Association of Collegiate Registrars and Admissions Officers

National Junior College Athletic Association

North Central Association of Colleges and Secondary Schools

Council of North Central Junior Colleges

Higher Education Division of the Missouri State Teachers Association

Missouri College Newspaper Association

Missouri Association of Collegiate Registrars and Admissions Officers

Interstate Athletic Conference

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JOPLIN PUBLIC SCHOOLS**Board of Education**

1962 - 1963

MEMBERS

Robert C. Cable

Evan D. Godfrey

Glenn E. Gavin

T. A. Helm

Mrs. Jean Sohosky

W. Norman Sharp

OFFICERS

Glenn E. Gavin, President

Mrs. Jean Sohosky, Vice-President

Fern Gray, Secretary

Eugene C. Cantrell, Treasurer

Herbert Van Fleet, Attorney

Roi S. Wood, Superintendent of Schools

JOPLIN JUNIOR COLLEGE

JOPLIN, MISSOURI

CALENDAR FOR THE YEAR 1962 - 1963

1962 —

September 4 ----- Counseling Tests for New Students
September 6 ----- Registration for Sophomores
September 7 ----- Registration for Freshmen
September 10, 8:00 a.m. ----- Classes Convene
November 22 and 23 ----- Thanksgiving Holidays
November 26, 8:00 a.m. ----- Classes Reconvene
December 19 (at close of session) -- Christmas Holidays

1963 —

January 2, 8:00 a.m. ----- Classes Reconvene
January 25, 9:00 a.m. Counseling Tests for New Students
January 25 ----- First Semester Ends
January 28 ----- Registration for Sophomores
January 29 ----- Registration for Freshmen
January 30, 8:00 a.m. ----- Classes Convene
February 22 ----- Washington's Birthday - Holiday
April 12 and 15 ----- Easter Holidays
April 16, 8:00 a.m. ----- Classes Reconvene
May 30 ----- Memorial Day
May 31 ----- Second Semester Ends
June 2 ----- Baccalaureate
June 3 ----- Commencement Exercises

FACULTY

Administration

- Roi S. Wood ----- President and Superintendent of Schools
A. B., Central Wesleyan College
A. M., University of Missouri
- Leon C. Billingsly ----- Dean
B. S., Southwest Missouri State College
M. S., K. S. C., Pittsburg, Kansas
Ed. D., University of Arkansas
- R. W. Baker ----- Director of Technical Education
Five years trade experience
A. B., Central College
A. M., University of Missouri
- Margaret Mitchell ----- Registrar
A.A., Monett Junior College
B. S., Southwest Missouri State College
M. B. A., University of Denver
- Mrs. Loretta Frazier ----- Librarian
B. S., Northwest Missouri State College
B. S. in Library Science, University of Illinois
- Mrs. Shirley Wilson ----- Secretary to the Dean
A. Bus., Joplin Junior College
- Neoma Lankford ----- Secretary
Joplin Junior College
- Katherine Black ----- Secretary
Joplin Junior College
- Mrs. Edna Mae Johnson -- Sec. to Director of Tech. Education

Instructors

- V. L. Anderson ----- Mechanical Drawing
B. S., Northwest Missouri State College
Stout Institute, Menomonie, Wisconsin
M.S., K.S.C., Pittsburg, Kansas
- Arthur Boles ----- Art
B. F. A., Chicago Art Institute
M.S.A.E., Institute of Design
(Illinois Institute of Technology)
- Milton W. Brietzke ----- Speech
A.A., Sacramento Junior College
A.B., San Jose State College
M.A., Western Reserve University

- Ada Coffey ----- English
A. B., A. M., University of Kansas
- C. E. Cowan ----- Commerce
B.S., Southwest Missouri State College
M.Ed., University of Missouri
- Lloyd L. Dryer ----- Psychology and Education
A.A., Northeastern Okla. A. & M. College
B.S., M.A., Ed.D., Oklahoma State University
- Merrill Ellis ----- Music
B.M., M.A., University of Oklahoma
Graduate study with Charles Giard, Spensor Norton,
Charles Garland, and Roy Harris
- Mrs. Naomi Ellis ----- Piano
B.F.A., University of Oklahoma
Graduate Work, University of Missouri
Piano with Johanna Harris, George Anson and Thor Jadorberg
- Wayne M. Gilbert ----- Sociology and Psychology
A.A., San Antonio College
B.A., M.A., University of Texas
- Harry C. Gockel ----- History, Economics, Geography
A.B., A.M., Washington University
M.S., University of Wisconsin
- Carl L. Graham ----- Sheet Metal
Twenty years trade experience
University of Missouri
- Marie A. Guengerich ----- Piano
Graduate, Calhoun School of Music, Joplin, Missouri
Special study with Helen Scoville; Studied at the Julliard
School of Music and the University of Chicago
- R. B. Hainline ----- Cabinet Shop
Six years trade experience
B.S., K.S.C., Emporia, Kansas
Graduate N.A.T.T.C., Chicago
- Robert A. Harris ----- Piano
A. Mus., Joplin Junior College
B. Mus., M.S., K.S.C., Pittsburg, Kansas
Student with Rosina Lhevinne
Aspen Music School

- Mrs. M. H. Harutun ----- Piano
Three years study, Kansas City Conservatory
Special study with John Thompson, James Friskin
and Dorothy Dring Smutz
- Cleetis Headlee ----- English and Journalism
B.S., A.M., University of Missouri
- Paul E. Jensen ----- Mathematics
B.S., Oklahoma City University
M. S., K. S. C., Pittsburg, Kansas
- Kenneth M. Johnson ----- Social Science
B.A., St. Olaf College
M.S., University of Wisconsin
- Harrison M. Kash ----- Chemistry
B.A., K.S.C., Pittsburg, Kansas
M. S., Kansas State Univ. of Agriculture and Applied Science
- Mrs. Mary Kirk Kelly ----- History
B.A., Alabama College - M.A., Vanderbilt University
and George Peabody College for Teachers
- Ellis Kindred ----- Auto Mechanics
Thirty-three years trade experience
K.S.C., Pittsburg, Kansas
- Douglas Landrith ----- Physical Education
B.S., M.S., K.S.C, Pittsburg, Kansas
- William J. Lebedeff ----- Brass Instruments
B.P.S.M., University of Miami
M.M., University of Michigan
"Specialist in Music Ed.", Columbia University
Student of Francis Hellstein, Detroit Symphony
- James K. Maupin ----- Zoology and Botany
B.S., Central Missouri State College
M.S., K.S.C., Pittsburg, Kansas
- Mrs. Grace Clayton Mitchell ----- English and Speech
A.B., Greensboro College
M.A., Pennsylvania State University
- Martha Ann McCormick ----- Mathematics
Ph. B., A.M., University of Chicago
- Eldon O. Offenbacker ----- Physics
B. S., M. S., K. S. C., Pittsburg, Kansas
- Mrs. Lucille Pohnka ----- Commerce
B.S.E., Arkansas State College, Jonesboro, Arkansas
M.B.E., University of Mississippi, Oxford, Mississippi

- Mrs. Mary Bingham Porter ----- Violin
Graduate, Drake School of Music, Chicago; Graduate work
at Von Ende School of Music, New York; Special study with
Sametini, Chicago Musical College, and Jacques Gorden,
New York; Master classes of Leopold Auer.
- Eula Ratekin ----- Chemistry
A.A., William Woods College
A.B., A.M., University of Missouri
- Mrs. Lorraine Riley ----- Voice
Two years study at Kansas City Conservatory of Music;
Five years private vocal instruction with Eleanor McLellan,
New York City; Five years private opera coaching with
Jean Paul Morel, present conductor at the Metropolitan
Opera Company, and Fritz Mahler, conductor of the Hart-
ford Symphony.
- Lela A. Smith ----- English
A.B., and B.S., Drury College
A.M., George Peabody College for Teachers
- Oliver Sovereign ----- Voice
B.S., K.S.C., Pittsburg, Kansas
Studied with Herbert Wall, University of Missouri;
Vincent Hubbard and Stephen Townsend, Boston;
Louis Graveure and Enrico Rasati, New York City
- Mrs. Oliver Sovereign ----- Piano
Studied with Leo Miller, St. Louis;
Max Landow and Alfred Oswald, Peabody Conservatory;
Helen Scoville, New York City
- Mrs. Lillian Spangler ----- Foreign Languages
A.B., A.M., University of Missouri
- Dudley F. Stegge ----- Physical Education
B.S., M.S., K.S.C., Pittsburg, Kansas
- Vera Margaret Steininger ----- Commerce
A.A., St. Joseph Junior College, St. Joseph, Mo.
A.B., University of Kansas
A.M., Columbia University
- Carl H. Well ----- Electric and Acetylene Welding
Twenty years trade experience
University of Missouri
- Clarence Witzansky ----- Auto Mechanics
Thirty years trade experience
- Keith Wormington ----- Machine Shop
Twenty-one years trade experience
University of Missouri
- Venus Yount ----- Physical Education
B.S., K.S.C., Pittsburg, Kansas

SECTION I

GENERAL INFORMATION

The information given in this catalog is for the school year 1962-1963. Changes may be made at any time. Any student registered in Joplin Junior College should refer to his catalog frequently to guide his progress. He will find statements on almost any problem that may arise. All decisions will be based on what is stated in the catalog. Any individual, interested in attending Joplin Junior College, can find details of requirements for registration, fees and other matters herein.

HISTORICAL STATEMENT

Joplin Junior College is an integral part of the public school system of the Joplin School District. It was organized by the Board of Education in 1937 as this community's part in a nationwide movement to extend the opportunity for the education of youth two years beyond high school.

On September 6, 1938 the College opened in its own building, located at Fourth and Byers. Blaine Hall, named in honor of H. E. Blaine, the first Dean of the College, was dedicated on November 1, 1946.

G. I. City, the veterans housing unit, was opened for veterans for the Spring Term of 1947.

Franklin Technical School was dedicated, March 21, 1948.

The College moved to the present location, 8th Street and Wall Avenue in the Fall of 1958.

PURPOSES

The particular objectives of Joplin Junior College are four in number:

(1) To provide an Arts and Science curriculum for those expecting to continue in colleges and universities.

(2) To provide semi-professional curriculums that will enable the graduate to enter fields bordering on the professional or technical work that does not require graduation from professional schools.

(3) To provide as many terminal vocational curriculums as possible; to meet the needs of a large number of students who may not wish to, or cannot, give more than two years further preparation for their life's work.

(4) To provide opportunity for individuals not interested in college degrees, to enrich their cultural backgrounds and to improve and advance themselves vocationally.

ACCREDITATION

Joplin Junior College is a member of the American Association of Junior Colleges, and is accredited by the North Central Association of Colleges and Secondary Schools, by the University of Missouri and by the State Department of Education.

ARMED SERVICE INFORMATION

Veterans

The college is accredited with the Veterans Administration and operates under contract whereby veterans may obtain the full benefit of the educational opportunities offered under Public Law 550 and Public Law 894. Information concerning the application of these laws to education may be obtained at the College.

War-Orphans' Education Program

Young men and women whose parents—World War I, World War II, or Korean Veterans—died of injuries or diseases resulting from their military service, may be eligible to receive training under the Government's education for war orphan's program, Public Law 634, 84th Congress.

The parent or guardian of the young man or woman must file an application with the Veterans Administration.

Selective Service

Letters of certification are sent from the office of the Dean to the respective Draft Boards so the students currently enrolled may secure educational deferment. All male students are eligible for these letters of certification if they are registered with the Draft Board, enrolled for a full schedule in the College (14 hours or more) and doing satisfactory work.

ADULT EDUCATION

College-credit courses are offered in the evening program to accommodate those who must work during the day. Any course offered in the day program will be offered in the evening if there is sufficient demand. A minimum of fifteen students is required. The tuition is seven dollars per semester hour plus a one dollar registration fee each semester except courses offered in the Franklin Technical School.

BUILDINGS AND EQUIPMENT

The Joplin Junior College campus is located at 8th Street and Wall Avenue. It is within walking distance of the business district and bus terminals, accessible by highways, and on inter-urban bus routes and is adjacent to the Joplin Carnegie Library.

Franklin Technical School is located at Thirteenth and Pearl

Avenue. This large building contains the classrooms and laboratory areas for the electronic and machine technology curriculums and the office of the Director of Technical Education. This is one of the best equipped technical schools in this section of the country.

All football games are played at Junge Stadium, Thirteenth and Murphy Avenue, and basketball games are played in the Memorial Hall, located at 212 W. 8th Street.

STUDENT PERSONNEL SERVICES

The Library

The College Library plays an integral part in the educational development of the students. The collection of 12,000 books, 114 periodicals and 6 daily newspapers has been carefully selected and offers an exceptional collection of standard and recent materials in reference, research, and the fields covered by the various curriculums.

Two reading and reference rooms provide adequate seating capacity. Open book stacks, the reference collection and newspapers are housed in the main reading room, while current and bound magazines are conveniently arranged in an adjacent periodical room. All students have stack privileges and are encouraged to select books for class work and recreational reading. Magazines and books placed on reserve reading lists are checked for overnight use only; books not so reserved may be checked for two-week periods.

In addition to the College collection, facilities of the Joplin Carnegie Library, containing 65,000 volumes, 125 magazines and 11 daily newspapers are available to students and faculty for consultation and withdrawal.

The Assembly

The College offers various programs that are entertaining, informative, esthetic, and spiritual.

The Cafeteria

The Cafeteria has the facilities for serving several hundred students. The policy of the Cafeteria is to serve well-balanced meals at a very low cost to the students. Student help tends to keep prices to a nominal amount.

Living Quarters for Students

Students who come from outside Joplin can find sleeping rooms with kitchen privileges, and small apartments in many private homes easily accessible to the College. Rooms are also available for students at the Y.M.C.A. and the Y.W.C.A. Residences. (Application should be sent directly to the Y.M.C.A. or the Y.W.C.A. Residences.)

Counseling

Every student at some time needs personal and individual help if he is to improve his planning and solve his problems. To insure each student of this help, a faculty adviser is assigned at the beginning of the freshman year. The duties of these advisers are threefold: (1) to help the student in planning his course of study and in solving his scholastic problems so that he may get the best education commensurate with his ability and capacity, (2) to assist the student to choose a vocation, prepare for, enter upon, and progress in it, and (3) to help the student to make his own decisions with respect to personal problems.

Guidance Examinations

Each student entering Joplin Junior College for the first time is required to take a series of tests.

Tests administered at the College are those given by the University of Missouri and other Missouri colleges that are members of the Missouri College Cooperative Program. These tests are administered to high school seniors during the spring semester and can be taken from any one of several testing centers. The Joplin Junior College is one of these centers. High school seniors will be notified of the time and place of the tests through their high school offices.

Scholarships

On April 2, 1957, The Board of Education of the School District of Joplin established two Scholarships in memory of Mr. H. E. Blaine, the first Dean of Joplin Junior College. These scholarships, based on academic achievement, are to be awarded annually to the highest-ranking boy and girl at the end of their freshman year and are to be used the following year in Joplin Junior College.

The College offers scholarships to high-ranking high school graduates. The scholarships cover the tuition for one year for non-resident students and the registration fee for resident students. These scholarships are sent to the administrators of the high schools and the recipients are selected by them. To be eligible, a student must rank in the upper ten per cent of the graduating class.

Scholarships are also offered to students who have demonstrated their ability to give outstanding performances in athletics, drama or music. Scholarships are for one year and students must participate in the activities for which the scholarships are granted.

For information about scholarships write to the Dean of Joplin Junior College.

Student Loans

THE IRWIN MEMORIAL FUND was established in memory of Arnold E. Irwin, instructor of political science at Joplin Junior College from 1946 to 1959. The Exchange Club of Joplin created a loan fund for deserving students of Joplin Junior College. The fund is available to students for emergency short-term loans. No security is required of the borrower, except that a note will be drawn up at the time the loan is made, for interest to begin at a time set by the adviser and the student. No interest will be charged before the time set in the adviser-student conference. The fund is administered by the Dean of the College and an advisory committee.

Joplin Junior College participates in the NATIONAL DEFENSE STUDENT LOAN PROGRAM. The purpose of the Program is to provide student loan funds for making long-time low-interest loans to students to pursue their college education.

Institutional Capital Contributions for the National Defense Student Loan Program have been obtained by donations from former students, funds of inactive student organizations and, a donation, on December 1, 1960, from the Kappa Upsilon Pi Study Club of Joplin.

To be eligible for a loan, a student must be in need of the amount of the loan, pursue a course of study at the institution, be capable of maintaining good standing in the courses, and have been accepted for enrollment as a full-time student, or if already attending an institution, be in good standing and in full-time attendance.

Placement Service

The college maintains a placement service and is constantly informed as to available positions in the business district. Graduates are assisted in finding full-time jobs and students are assisted in finding part-time employment.

Write to the office of the Dean for information.

INSTRUCTIONS FOR NEW STUDENTS

Because it is sometimes difficult for the beginning student to know just what is expected of him, the following information has been compiled and is printed here for convenience.

A student entering Joplin Junior College as a freshman in the fall of 1962 is expected to:

1. Furnish a transcript of his high school work. The prospective student should request the principal of his high school to send the transcript to the Registrar prior to September 1, 1962.

2. Attend one of the following Guidance and Orientation Sessions Tuesday, September 4, 1962.

9:00 A.M. - 1:00 P.M.

or

6:00 P.M. - 10:00 P.M.

(A student who has participated in the Missouri College Cooperative Program of testing in the current year, will be excused from the above Guidance and Orientation Sessions.)

3. Register on Registration Day, September 7, 1962 and pay tuition and fees.

GENERAL REGULATIONS**ADMISSION****Admission by Certificate**

The College regularly admits without examination graduates of fully accredited high schools who present at least fifteen units of high school credit including the following:

English -----	3 units	Mathematics -----	1 unit
Social Science ----	3 units	Science -----	1 unit

The remainder of the fifteen units may be selected from any courses accepted by an accredited high school for its diploma, with the exception of physical education and military science. Not more than two units in Co-operative Occupational Education will be accepted.

Non-graduates from accredited high schools who present 15 acceptable units will be admitted by certificate if they are recommended for college admission by the high school principal or superintendent.

All candidates are expected to meet the specific admission requirements, if any, of the curriculum they desire to enter. See Section II.

A prospective student should request the principal of his high school to send a transcript of his work to the Registrar's Office. The diploma will not be accepted as a credential.

Veterans

A man or woman whose formal education has been interrupted by military service and who has not attended high school, or has not completed a high school program, may qualify for admission by taking the General Educational Development tests prepared by the Armed Forces Institute, or by taking comparable forms of the same tests after separation from service.

Students Transferring from Other Colleges and Universities

A student who has been regularly admitted to another college or university of recognized standing may be admitted to Joplin Junior College upon presentation of a statement of honorable dismissal. An official transcript of all college work should be filed with the Registrar prior to enrollment.

Special Students

Persons over twenty-one years of age who have not completed requirements for admission and who present evidence of special preparation and attainment may be admitted to the College as special students. These students may become candidates for degrees when regular admission has been established. Special students are required to take all examinations in their courses, and are subject to the same scholastic requirements as regular students.

Hearers

With the consent of the Registrar and the instructors concerned, students may be admitted to any course as hearers. Hearers must be registered and must pay fees, but are not required to take examinations. They receive no college credit.

ADVANCED STANDING EXAMINATIONS

A student whose educational experiences appear to have given him proficiency in a course (required in his curriculum) equivalent to that ordinarily attained by those taking the course in regular class, may be granted permission to take an advanced-standing examination in the course. The examination shall be a comprehensive one and shall be designed to cover the subject more fully and shall be broader and more complete than a regular final examination.

In addition to having the above qualifications, a student, in order to qualify for an advanced examination, must

- (a) be enrolled in this college at the time of the examination;
- (b) be working toward a degree from this college;
- (c) lack more than one semester's work toward meeting the requirements for graduation;
- (d) not have credit in a more advanced course in the same field;
- (e) have the approval of the dean and the instructor of the course;
- (f) not have taken an examination over the course within the preceding six months;
- (g) pay a fee of five dollars for each examination.

After the student takes the examination, the instructor will turn in a grade for the course, provided the grade is "M" or better.

REQUIREMENTS FOR GRADUATION

Associate degrees are conferred at the close of the second semester of each school year: Associate in Arts; Associate in Business; Associate in Music; Associate in Science; Terminal Certificates in Electronic Technology and in Machine Technology.

In order to receive the Associate Degree, the candidate must meet the following requirements:

1. He must have been regularly admitted to the College and must have met all admission requirements for the curriculum that he is following.
2. He must have earned a minimum of 64 semester hours of credit and 64 honor points, including 4 semester hours of physical education. (See below for explanation of honor points).

(A student is expected to participate in the physical education program. When a student is unable to do so, he may present 4 semester hours additional credit by obtaining special permission from the Dean.)

3. He must have satisfied the course requirements for one of the degree plans in Section II.

4. He must have completed at least 12 semester hours of consecutive courses at Joplin Junior College, including at least 3 semester hours his final semester.

GRADES AND GRADE REPORTS

The following marks are used in grading work: E, S, M, I, F, WP, and WF. They are defined as follows:

E	Excellent	F	Failing
S	Superior	WP	Withdrawal passing
M	Medium	WF	Withdrawal failing
I	Below average		

(An instructor may give an incomplete grade to a student, who because of illness or other acceptable reasons, has been unable to complete the work of the course. The work must be completed within two weeks following the close of the same semester.)

"T" and "F" grade reports are mailed to the parents or guardians at the end of the ninth week of each semester. Complete grade reports are mailed at the end of each semester.

Honor Points are given according to the grade and the number of semester hours earned: One semester hour with a grade of "E" entitles the student to 3 honor points (sometimes referred to as "grade points"); one semester hour with a grade of "S", 2 honor points; one semester hour with a grade of "M", 1 honor point. Any grades below "M" do not add honor points.

HONORS AT GRADUATION

Students who complete all requirements for the associate degree with an honor point average of 2.7, or above, for all hours attempted will receive First Honors; students who complete the requirements with an honor point average of 2.4 to 2.6, will receive Second Honors; and students who complete the requirements with an average of 2.0 to 2.3, will receive Third Honors.

QUANTITY AND QUALITY OF WORK REQUIRED

The normal college load is fifteen hours of work in addition to physical education. A student may not register for more than sixteen nor less than twelve semester hours in any semester without the approval of the Dean. An exception to this regulation is made in the case of engineering students who are permitted to carry seventeen or eighteen hours per semester.

The Honor Roll is published at the end of each semester. To be eligible for the Honor Roll a student must carry at least twelve semester hours of work, exclusive of physical education, and must average at least 2.0 honor points on all work carried.

A student who is not making passing grades in at least 60 per cent of work carried is advised to withdraw at the end of the semester. He may continue on probation for one semester. If he fails to improve his work, he may be suspended for one semester.

CLASS ATTENDANCE

Regular attendance in class and laboratory sessions is an obligation assumed by every student at the time he registers. The college does not maintain a system of excused absences and an accumulation of absences will adversely affect the semester grade. A student absent without explanation for two consecutive weeks is dropped from the official rolls and his reinstatement will be subject to the action of the Dean.

Approval to withdraw from a course must be obtained from the Dean. Unauthorized withdrawal from a course or absence from the final examination will result in the failing grade of "WF" for the course.

WITHDRAWALS

A student wishing to withdraw from the College for the remainder of a semester must secure an honorable dismissal through the Dean's office, after he has first returned all books and other equipment charged to him, paid all fines and fees, and cleared himself in every respect with the College office.

A student who fails to comply with the above procedure will not be recommended to any other college or university, nor will he be eligible to receive refunds of such fees or deposits as are by the rules returnable.

CHANGES IN PROGRAMS

During the first week of each semester a student may petition for a change in program in the office of the Dean. (See Fees for Change in Program).

All changes in schedules must be recorded in the office and any irregularity in procedure may result in an "F" on the record of the student.

CLASSIFICATION OF STUDENTS

A student is classified as a freshman until he completes at least twenty-nine hours.

EXPENSES AND PAYMENTS

All statements as to fees contained in this catalog are by way of announcement only for the school year covered by the catalog. The College reserves the right to change fees at any time without notice being given in advance.

All fees must be paid in full at the time of registration at the opening of each semester or term as a condition of admission to classes. Registration is not complete until all fees are paid.

FULL-TIME STUDENTS

A student who enrolls for eight or more semester hours is considered a full-time student and will pay the following fees:

Tuition — Tuition is free to all students under 20 years of age who are residents of the School District of Joplin.

Students who are non-residents of the School District of Joplin are required to pay a tuition fee of eighty dollars (\$80) per semester. Status of residence is determined by the place of residence of the student's parents or legal guardians.

Students who are residents of the School District of Joplin and are 20 years of age or over are required to pay a tuition fee of fifty dollars (\$50) per semester. Evidence must be presented to show that the student has been a resident of the School District of Joplin for a period of at least one year prior to registration.

Matriculation — A five dollar (\$5) matriculation fee is charged all students and is payable at the time they enroll in the College for the first time. This fee will not be subject to refund at any time.

Registration — The registration fee is forty dollars (\$40) per semester.

Textbook Rental and Deposit — All textbooks are owned by the Joplin Junior College and are rented to the student. Rental is ten dollars per semester and Deposit is ten dollars per semester. The ten-dollar Deposit will be refunded to the student when he returns all books and equipment belonging to the College.

PART-TIME STUDENTS

A student who enrolls for less than eight semester hours is considered a part-time student and will pay the following fees:

Matriculation — A five dollar (\$5) matriculation fee is charged all students and is payable at the time they enroll in the College for the first time. This fee will not be subject to refund at any time.

Registration — The registration fee is five (\$5) dollars per semester hour.

Tuition — Tuition is free to all students under twenty years of age who are residents of the School District of Joplin.

Students who are non-residents of the School District of Joplin are required to pay a tuition fee of six (\$6) dollars per semester hour.

Students who are residents of the School District of Joplin and are 20 years of age or over are required to pay a tuition fee of four (\$4) dollars per semester hour.

Textbook Rental and Deposit — All textbooks are owned by the Joplin Junior College and are rented to the student. Rental is two dollars per course and Deposit is three dollars per course. The three-dollar Deposit will be refunded to the student when he returns all books and equipment belonging to the College.

OTHER FEES

The following fees are applicable to full-time and part-time students:

Applied Music — For one 30-minute lesson per week in applied music, the usual fee is \$36 per semester. It will be paid to the instructor.

Laboratory Breakage Fee — A deposit of one dollar (\$1) to cover breakage is charged for all chemistry laboratory courses. Any unused portion will be refunded at the close of the semester. Should the amount of breakage exceed the deposit, the difference must be paid at the end of the semester in order to clear all records.

Fee for Late Registration — Every student who enrolls after the registration day of each semester must pay a fee of one dollar (\$1) for late registration, in addition to the other fees.

Fee for Change of Program

With the exception of errors made by the College staff, a fee of one dollar (\$1.00) must be paid for each petition to change a course after the period allowed for changing programs.

All changes in programs must be approved in advance by the Dean.

Transcript Fee

Each student is entitled to two official transcripts free of charge. For each additional transcript, a fee of \$1.00 is charged.

Refund of Fees

Students leaving school or dropping courses for which they have paid fees, prior to the fifth week of the semester involved, will receive a refund of the fees paid in accordance with the following schedule:

Time of Withdrawal	Amount of Fee to be Refunded
Within the first and second weeks	80 per cent
Within the third and fourth weeks	50 per cent
After the fourth week	No Refund

STUDENT ACTIVITIES

Opportunity for participating in a wide variety of out-of-class activities is provided at Joplin Junior College. Students are encouraged to investigate the wide choice of activities and are expected to participate in one or more of these aspects of the college program.

Student Senate

The Senate is composed of the President, Vice-President, Secretary, Treasurer and Parliamentarian of the student body elected annually from the school at large; and the student senators elected from the classes by proportional representation. The Dean of the College and one other member of the faculty are advisers.

Phi Theta Kappa

Phi Theta Kappa (Eta Chi Chapter) is a national scholastic fraternity that has as its purpose the promotion of scholarship, the development of character, and cultivation of fellowship among students of both sexes in the junior colleges of the United States. To be eligible for election to membership, a student must have a grade point average of 2.3 at the end of his first semester, or a cumulative average of 2.2 at the end of his second semester, or a cumulative average of 2.1 at the end of his third semester. He must also be carrying an accumulative average of 15 hours per week, 12 of which must be accreditable in Arts and Science, and be in the upper scholastic 10 per cent of the regularly enrolled student body. To maintain active membership, a student must at the end of any given semester have a grade point average of not less than 2.0.

Pi Alpha Pi

The purpose of Pi Alpha Pi, is to promote scholarship, to create an interest in and an understanding of the business world, and to encourage each member to develop himself to a higher level of leadership, personality, and service.

To be eligible for membership, a student must have a grade point average of 2.2 for his first semester, 2.15 accumulative for his second semester, and 2.0 accumulative for his third semester, be carrying an accumulative average of 12 semester hours per week, and either be enrolled in the Business Administration or General Business curriculum, or, if enrolled in any other curriculum he must be carrying at least six semester hours of business subjects in one semester. To maintain active membership, a student must, at the end of any given semester, have an accumulative grade point average of not less than 2.0 with no one grade lower than an "M".

Theta Mu Gamma

Theta Mu Gamma is an honorary Joplin Junior College music fraternity. Membership is open to any qualified musician who is properly enrolled and is satisfactorily passing his courses in the College. Each member is required to perform in public or before the Club at least once each semester.

The purposes of Theta Mu Gamma are: to promote better music through the college and the community; to encourage public musical performance by the various members; to recognize honorable achievement in music; and to encourage participation in the College Choir and church choirs of the member's own choice.

Student N.E.A.

The Student National Education Association is the professional association for college students who are preparing to teach. Its members are members of duly chartered local chapters. Local chapters and state student education associations are integral parts of the Student N.E.A. A member of the Student N.E.A. is a student member of the Missouri State Teachers Association and the National Education Association, with all the rights, privileges, and responsibilities of associate membership in these professional organizations. Members receive the N.E.A. Journal. The Student N.E.A. calendar includes many and varied academic and social activities.

Y. M. C. A.

The Junior College Luncheon Club was first organized in 1938 by Dr. Paul R. Stevick. Noon luncheon meetings are held weekly at the Joplin Y. M. C. A. The purpose of the Club is to promote fellowship among the students and faculty men of the College; to fulfill more adequately the objectives of the Y. M. C. A. in building Christian personalities; to foster Christian ideals on the College Campus.

Each year the Club adopts projects of service and assistance. The Club attempts to send delegates to the State and Regional Y. M. C. A. conferences.

Y. W. C. A.

The Young Women's Christian Association, organized in 1938, endeavors to be of service to the women students of the College. It is a comradeship in which every woman of the College may share and offers an opportunity for development and training in leadership, religion and social service. The activities of the Y. W. C. A. are varied enough for each member to do the type of work

that appeals most to her interest. The group is affiliated with the National Student Christian Association and the National Student Y.W.C.A. Each year it contributes to and initiates the all-student World University Service Drive for the relief of students in other countries.

A group of delegates attend the state fall and spring conferences of the Y.W.C.A. and the regional Conference at Estes Park, Colorado, during the summer.

Engineer's Club

The Engineer's Club is organized for the purpose of fostering a professional spirit and promoting the interests and activities of its members. To accomplish this purpose the Club sponsors technical projects, professional speakers, field trips to industrial plants, etc. The major social activity of the Club is the celebration of St. Patrick's Day.

To be eligible for membership a student must be enrolled in engineering, physical science, or related fields.

The "Math" Club

The "Math" Club is composed of students who are interested in mathematics. Its purpose is to increase students' knowledge in areas of mathematics not covered in regular courses and to interest students in individual study.

The Modern Language Club

The Modern Language Club is open to students of French, Spanish and German. The purpose of this group is to become better acquainted with the languages learned and with the people and countries where these languages are spoken. Some of the contributions to literature, art and music are studied including the ones which are popular today. It has a yearly project in which the Club renders service either here or abroad.

The College Players

The College Players is organized for the purpose of promoting interest in dramatic productions. With this purpose in mind the members produce two plays during the school year, and contribute materially to assemblies and other school functions. Membership includes not only those who may have met special requirements and shown ability in acting, but students in any field of dramatic work. Make-up, costuming, set designing, publicity management, and stage direction are other phases which are studied by this organization.

Circle K

The Circle K Club was organized in 1955 by the Kiwanis Club of Joplin. The Club is a service organization formed to be of

service to both the College and to the community.

Students belonging to this organization are leaders in campus life and are accepted because of their ability and willingness to serve.

Chorus

Chorus is open to any properly enrolled student who loves to sing and has some background and experience in choral work. Auditions are held at the beginning of each semester. The college choir is limited to 60 voices.

Activities of the choir consist of concerts in neighboring towns and schools, at least one trip each year, participation with the Community Choir in the performance of an oratorio each spring, and a portion of the Baccalaureate and Commencement exercises at the end of the college year.

The director of the chorus group chooses a Triple Trio and a Men's Double Quartet from the personnel as special ensemble groups. These groups have proven very popular in civic programs and special recitals.

Beta Beta Beta

The Tri-Beta sorority is a social organization for women students. It is not affiliated with a national sorority. Its purpose is to develop and to promote interest in the social and cultural graces. Although its membership is limited, many of its programs are open to the Joplin Junior College student body.

The annual Beta calendar usually includes a rush tea in the fall, initiation of pledges, the formal Christmas and spring dances, a part in an orientation assembly, and informal get-togethers.

Young Democrats' Club

The Young Democrats' Club of Joplin Junior College is a student organization whose purpose is to encourage student interest and responsibility in politics. Its programs are designed to inform and to give practical experience in party politics. Any student officially enrolled at Joplin Junior College is eligible for membership.

Young Republicans' Club

The Young Republicans' Club of Joplin Junior College advocates an understanding of party politics as well as an awareness of the responsibilities of the citizen to his country. Any student officially enrolled at Joplin Junior College is eligible for membership.

Athletics

Joplin Junior College is a member of the Interstate Conference and participates in the following inter-collegiate activities: Basketball, Football, Track, Golf and Tennis.

It is the policy of Joplin Junior College to conduct its inter-collegiate athletic program in such a manner so as to create respect for good sportsmanship and an appreciation of sound moral values. At no time will the inter-collegiate athletic program run counter to the main functions of the college which include, in addition to its academic goals, the education of its students in sound practices of democratic citizenship, community responsibility, sound religious and moral values, and an understanding of the rights of others.

The college attempts to build its inter-collegiate program around two major concepts:

1. The athletic program is an integral part of the educational program of the institution.
2. At no time is the inter-collegiate athletic program permitted to dominate the educational philosophy so as to bring discredit to the purpose for which the institution was founded, namely, the education of all students.

To be eligible for participation in contests for the College, students must be doing passing work in at least ten hours, exclusive of physical education.

With the exception of first-semester freshmen, to be eligible for participation in athletics, students must have passed in at least ten hours in the preceding semester in school.

The Crossroads

The Crossroads, the school annual, has been published each year since the College was opened. Each year the annual is the product of a student staff with faculty sponsors. It is an honor to be chosen Editor of the Crossroads, Business Manager of the Crossroads, or even a member of the staff which is limited to a very few. Recently student photographers have added much to the student interest in the annual. Every student is urged to have his picture made for the annual; likewise, each organization is urged to respond with group pictures and other pictures of interest.

The Chart

The Chart staff publishes 12 issues of the College newspaper. Throughout the year the editorial division uses the work of many reporters, feature writers, cartoonists, photographers, and typists. The business staff offers experience in advertising, salesmanship, and secretarial practices. Students interested in an editorial position should register for the Survey of Journalism course. Those wishing to free-lance should attend weekly staff meetings.

The Student Handbook

The Student Handbook, a compilation of information about the College, is sponsored by the Student Cabinet of the Student Senate.

The Student Directory

The Student Directory is compiled by the Student Senate and is published annually.

SECTION II

This section contains suggested programs of study to guide the students in the selection of courses. The programs have been carefully planned and students should follow them as closely as possible. All electives should be chosen in conference with an instructor.

Schedules of courses offered during the 1962-1963 session will be published as separate bulletins.

AGRICULTURE CURRICULUM

Degree: Associate in Arts

1. Courses required for the Agriculture Curriculum:

English 1 and 2	6 semester hours
Speech	2 or 3 semester hours
Inorganic Chemistry	5 semester hours
General Botany or Zoology	5 semester hours
General Economics	5 semester hours
Government or American History ..	5 semester hours
Algebra	3 or 5 semester hours
Exposition	3 semester hours
Accounting	3 semester hours
General Psychology	3 semester hours
General Sociology	3 semester hours
Electives	17 or 15 semester hours
Physical Education	4 semester hours

2. Suggested Order of Study:

FRESHMAN YEAR

First Semester		Second Semester	
English 1 - - - - -	3 hours	English 2 - - - - -	3 hours
Inorganic Chemistry 1 - - -	5 hours	Inorganic Chemistry 2 - - -	3 hours
Psychology - - - - -	3 hours	Algebra 3 or	
American History - - - -	5 hours	Algebra and Trigonometry -	5 hours
Physical Education - - - -	1 hour	General Sociology - - - -	3 hours
		Speech - - - - -	3 or 2 hours
		Physical Education - - - -	1 hour
	17		17

SOPHOMORE YEAR

First Semester		Second Semester	
Exposition - - - - -	3 hours	Botany - - - - -	5 hours
Zoology - - - - -	5 hours	Economics - - - - -	5 hours
Accounting 1 - - - - -	3 hours	State Government - - - -	2 hours
U. S. Government - - - -	3 hours	Electives - - - - -	2 hours
Physical Education - - - -	1 hour	Physical Education - - - -	1 hour
	15		15

APPLIED MUSIC CURRICULUM**Degree: Associate in Music****1. Courses required in the Applied Music Curriculum:**

English 1 and 2	6 semester hours
Speech	2 or 3 semester hours
Literature	4 semester hours
Foreign Language (French or German) ...	10 semester hours
Music Theory	16 semester hours
History of Music	6 semester hours
Applied Music (major field)	6 semester hours
Applied Music (minor field)	3 semester hours
U. S. and State Government or American History	5 semester hours
Electives	2 semester hours
Physical Education	4 semester hours

1. Applied Music: Private instruction may be arranged for piano, organ, voice and most orchestral instruments. Two hours of credit per semester may be granted for major study, and one hour of credit for minor study, upon the recommendation of the faculty member. The term, major field, refers to the field of specialization, such as piano, or voice. Minor field refers to a complementary field; for instance, voice majors should minor in piano. One lesson of one hour per week, or two 30-minute lessons per week are required for major study, and one 30-minute lesson per week is required for minor study. Courses in major field shall be numbered 112, 122, 212, 222. Courses in minor field shall be numbered 111, 121, 211, 221.

2. Ensembles: Band, glee clubs, chorus, and other vocal and instrumental ensembles are open to all students. Arrangement of the ensembles is made according to the personnel available. One hour elective credit per semester for each activity is allowed to a maximum of eight hours. Music majors are expected to participate in vocal and instrumental ensembles.

3. Suggested Order of Study:

FRESHMAN YEAR

First Semester		Second Semester	
English 1 - - - - -	3 hours	English 2 - - - - -	3 hours
Music Theory 3 - - - - -	5 hours	Music Theory 4 - - - - -	5 hours
Foreign Language, or		Foreign Language - - - - -	5 hours
U. S. Government and		Major Instrument 122 - - - - -	2 hours
Speech - - - - -	5 hours	Minor Instrument 121 - - - - -	1 hour
Major Instrument 112 - - - - -	2 hours	Physical Education - - - - -	1 hour
Minor Instrument 111 - - - - -	1 hour		
Physical Education - - - - -	1 hour		
	17		17

SOPHOMORE YEAR

First Semester		Second Semester	
Foreign Language - - -	3 or 5 hours	English Literature 12 - - -	3 hours
or		Music Theory 16 - - - - -	3 hours
U. S. Government, Minor		History of Music 36 - - - - -	3 hours
Instrument 211, and Elective		Major Instrument 222 - - - - -	2 hours
English Literature 11 - - -	3 hours	Minor Instrument 221 - - - - -	1 hour
Music Theory 15 - - - - -	3 hours	Speech - - - - -	3 or 2 hours
Major Instrument 212 - - - - -	2 hours	State Government - - - - -	2 hours
History of Music 35 - - - - -	3 hours	Physical Education - - - - -	1 hour
Physical Education - - - - -	1 hour		
	17		17

ARTS AND SCIENCE CURRICULUM

Degree: Associate in Arts

1. Courses required for the Arts and Science Curriculum:

English 1 and 2	6 semester hours
Speech	2 or 3 semester hours
Literature	3 semester hours
Mathematics	3 semester hours
Fine Arts Appreciation or Foreign Language	5 semester hours
Biological Science	5 semester hours
Fundamentals of Physical Science, Chemistry or Physics	5 semester hours
American History or Government ...	5 semester hours
Economics	5 semester hours
General Psychology	3 semester hours
Electives	18 semester hours
Physical Education	4 semester hours

2. Suggested order of study:

FRESHMAN YEAR

First Semester	Second Semester
English 1 - - - - - 3 hours	English 2 - - - - - 3 hours
Foreign Language or Fine Arts Appreciation - - 5 hours	Algebra - - - - - 5 hours
American History or Government - - - - - 5 hours	Foreign Language or Fine Arts Appreciation - - 5 hours
Speech - - - - - 3 or 2 hours	General Psychology - - - 3 hours
Physical Education - - - - 1 hour	Physical Education - - - - 1 hour
<hr/> 17 or 16	<hr/> 17

SOPHOMORE YEAR

First Semester	Second Semester
Foreign Language or Fine Arts Appreciation - - 5 hours	Economics - - - - - 5 hours
Science - - - - - 5 hours	Science - - - - - 5 hours
Government or American History - - - - 5 hours	Literature - - - - - 3 hours
Physical Education - - - - 1 hour	Elective - - - - - 3 hours
<hr/> 16	Physical Education - - - - 1 hour
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BUSINESS ADMINISTRATION CURRICULUM**Degree: Associate in Arts****1. Courses required in the Business Administration Curriculum:**

English 1 and 2	6 semester hours
Speech	2 or 3 semester hours
Literature	3 semester hours
Algebra	3 or 5 semester hours
Economics	5 semester hours
Accounting	6 semester hours
American History	5 semester hours
United States and State Government	5 semester hours
Fine Arts Appreciation or Foreign Language	5 semester hours
Biological Science	5 semester hours
Fundamentals of Physical Science, Chemistry or Physics	5 semester hours
Psychology	3 semester hours
Electives	5 semester hours
Physical Education	4 semester hours

2. Suggested order of study:**FRESHMAN YEAR**

First Semester	Second Semester
English 1 - - - - - 3 hours	English 2 - - - - - 3 hours
Accounting 1 - - - - - 3 hours	Accounting 11 - - - - - 3 hours
Fine Arts Appreciation, Foreign Language, or American History - - - - 5 hours	Fine Arts Appreciation, Foreign Language, or American History - - - - 5 hours
Science - - - - - 5 hours	Algebra 3 or - - - - -
Physical Education - - - - 1 hour	Algebra & Trigonometry - - 5 hours
	Physical Education - - - - 1 hour
17	17

SOPHOMORE YEAR

First Semester	Second Semester
Accounting 12 - - - - - 3 hours	Accounting 23 - - - - - 3 hours
U. S. and State Government or Science - - - - - 5 hours	Economics - - - - - 5 hours
Psychology - - - - - 3 hours	U. S. and State Government or Science - - - - - 5 hours
Speech - - - - - 3 or 2 hours	Literature - - - - - 3 hours
Elective - - - - - 3 or 2 hours	Physical Education - - - - 1 hour
Physical Education - - - - 1 hour	
16	17

GENERAL BUSINESS CURRICULUM**Degree: Associate in Business****1. Courses required for the General Business Curriculum:**

English 1	3 semester hours
Business Communications or English 2	3 semester hours
*Shorthand (Must include Courses 13 and 33)	6-12 semester hours
Typewriting (Must include Courses 15 and 16)	6-12 semester hours
*Accounting	3-12 semester hours
Office Machines	6 semester hours
Secretarial Procedures	3 semester hours
Business Law	3 semester hours
Business Arithmetic	3 semester hours
United States Government and State Government or American History	5 semester hours
**Electives	15-0 semester hours
Physical Education	4 semester hours

*A student may specialize in Shorthand or Accounting, or both, but in any case will take one course in Accounting.

**Electives should include: General Psychology, Speech, Literature, Geography, Economics, Science, Introduction to Business.

2. Suggested order of study:**FRESHMAN YEAR**

First Semester	Second Semester
English 1 - - - - - 3 hours	Business Communications - - - 3 hours
Shorthand 3 or 13 - - - - - 3 hours	Shorthand 4 or 33 - - - - - 3 hours
Accounting 1 (at least one course required) - - - - - 3 hours	Accounting 11 - - - - - 3 hours
Business Arithmetic - - - - - 3 hours	Typewriting 6 or 16 - - - - - 3 hours
Typewriting (5 or 15) - - - - 3 hours	Office Machines 20 - - - - - 3 hours
Physical Education - - - - - 1 hour	Physical Education - - - - - 1 hour
<hr/> 16	<hr/> 16

SOPHOMORE YEAR

First Semester	Second Semester
Shorthand 13 - - - - - 3 hours	U. S. Government - - - - - 3 hours
Typewriting 15 - - - - - 3 hours	Typewriting 16 - - - - - 3 hours
Accounting 12 - - - - - 3 hours	Accounting 23, or
Office Machines 35 - - - - - 3 hours	Shorthand 33 - - - - - 3 hours
State Government - - - - - 2 hours	Business Law - - - - - 3 hours
Electives - - - - - 2 hours	Secretarial Procedures - - - 3 hours
Physical Education - - - - - 1 hour	Physical Education - - - - - 1 hour
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GENERAL BUSINESS CURRICULUM (One Year)**Degree: Certificate****1. Courses required for the one-year General Business Curriculum:**

English 1	3 semester hours
Business Communications or English 2	3 semester hours
Shorthand	6 semester hours
Typewriting	6 semester hours
Accounting	3 semester hours
Introduction to Business	3 semester hours
Office Machines	3 semester hours
*Electives	3 semester hours
Physical Education	2 semester hours

*Electives should be chosen from: General Psychology, Speech, Literature, Business Arithmetic.

2. Suggested Order of Study:

First Semester		Second Semester	
English 1	- - - - - 3 hours	Business Communications	- - 3 hours
Shorthand 13	- - - - - 3 hours	Shorthand 33	- - - - - 3 hours
Typewriting 15	- - - - - 3 hours	Typewriting 16	- - - - - 3 hours
Accounting 1		Accounting 11	- - - - - 3 hours
or Elective	- - - - - 3 hours	Office Machines 20	- - - - - 3 hours
Introduction to Business	- - 3 hours	Physical Education	- - - - 1 hour
Physical Education	- - - - 1 hour		
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DENTAL CURRICULUM**Degree: Associate in Arts****1. Courses required for the Dental Curriculum:**

English 1 and 2 -----	6 semester hours
Inorganic Chemistry -----	8 semester hours
Zoology -----	5 semester hours
Anatomy and Physiology -----	5 semester hours
Physics -----	8 semester hours
American History or Government ---	5 semester hours
Electives -----	23 semester hours
Physical Education -----	4 semester hours

2. Suggested Order of Study:**FRESHMAN YEAR**

First Semester		Second Semester	
Inorganic Chemistry 1 - - -	5 hours	Inorganic Chemistry 2 - - -	3 hours
Zoology - - - - -	5 hours	Anatomy and Physiology -	5 hours
Algebra and Trigonometry -	5 hours	Qualitative Analysis - - -	3 hours
Physical Education - - - -	1 hour	American History - - - -	5 hours
		Physical Education - - - -	1 hour
	<hr/>		<hr/>
	16		17

SOPHOMORE YEAR

First Semester		Second Semester	
English 1 - - - - -	3 hours	English 2 - - - - -	3 hours
Physics 1 - - - - -	5 hours	Physics 2 - - - - -	3 hours
Government - - - - -	3 hours	Economics - - - - -	5 hours
Psychology - - - - -	3 hours	Literature - - - - -	3 hours
Elective - - - - -	2 hours	Speech - - - - -	3 or 2 hours
Physical Education - - - -	1 hour	Physical Education - - - -	1 hour
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	17		17

ENGINEERING CURRICULUM**Degree: Associate in Science****1. Courses required for the Engineering Curriculum:***

English 1 and 2	6 semester hours
Literature	3 semester hours
Algebra and Trigonometry	5 semester hours
Analytic Geometry and Calculus	15 semester hours
Inorganic Chemistry	8 semester hours
Engineering Drawing	2 semester hours
***Descriptive Geometry	2 semester hours
Physics	10 semester hours
U. S. and State Government or American History	5 semester hours
**Electives	4 semester hours
Physical Education	4 semester hours

*The admission requirements for this curriculum must include three units in mathematics and one unit in science with laboratory.

**Electives must be approved by the student's adviser and should be selected from the following: Plane Surveying, Engineering Drawing 3, Qualitative Analysis, Quantitative Analysis, Elementary Organic Chemistry, General Economics, Slide Rule, Statics, Speech.

***Descriptive Geometry may be omitted for the Chemical Engineering Program.

2. Suggested Order of Study:**FRESHMAN YEAR**

First Semester		Second Semester	
English 1	3 hours	English 2	3 hours
Algebra and Trigonometry	5 hours	Analytic Geometry	
Inorganic Chemistry 1	5 hours	and Calculus 14	5 hours
Engineering Drawing	2 hours	Inorganic Chemistry 2	3 hours
Slide Rule	1 hour	Descriptive Geometry	2 hours
Physical Education	1 hour	State Government and Electives	4 hours
		Physical Education	1 hour

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SOPHOMORE YEAR

First Semester		Second Semester	
Literature	3 hours	Analytic Geometry	
Analytic Geometry		and Calculus 16	5 hours
and Calculus 15	5 hours	Physics 4	5 hours
Physics 3	5 hours	Statics	3 hours
U. S. Govt. or Electives	3 hours	U. S. Govt. and/or Electives	5 hours
Physical Education	1 hour	Physical Education	1 hour

17

19

3. Specific grade requirements in the Engineering Curriculum are: A minimum grade of "M" in Algebra and Trigonometry 5 and a minimum grade of "M" in Chemistry 1.

GENERAL CULTURE CURRICULUM

Degrees: Associate in Arts
Associate in Science

1. Courses required for the General Culture Curriculum:

English 1 and 2	6 semester hours
United States and State Government or American History	5 semester hours
Electives	49 semester hours
Physical Education	4 semester hours

2. The General Culture Curriculum is planned to give the student maximum flexibility in planning his junior college program.

Sixty per cent of the total hours presented for graduation must be from work acceptable in the Arts and Science curriculum.

JOURNALISM CURRICULUM

Includes preparation for Editorial,
Advertising, Publishing, and non-
technical Radio Curriculums.

Degree: Associate in Arts

1. Courses required for the Journalism Curriculum:*

English 1 and 2	6 semester hours
Foreign Language (in 1 Language)	13 semester hours
Biological Science or Physical Science	5 semester hours
Economics	5 semester hours
Survey of Journalism	1 semester hour
U. S. Government	3 semester hours
English Literature	6 semester hours
American History	5 semester hours
**Electives in Arts and Science Courses	16 semester hours
Physical Education	4 semester hours

*One unit of Typewriting should be included in the high school credits.

**Electives should be chosen from Sociology, Speech, General Psychology,
Mathematics, Exposition, Accounting.

2. Suggested Order of Study:

FRESHMAN YEAR

First Semester	Second Semester
English 1 - - - - - 3 hours	English 2 - - - - - 3 hours
Foreign Language or Electives - - - - - 5 hours	Foreign Language - - - - - 5 hours
Science or Electives - - - - - 5 hours	Science or Electives - - - - - 5 hours
Survey of Journalism - - - - - 1 hour	Survey of Journalism and Electives - - - - - 3 hours
Electives - - - - - 2 hours	Physical Education - - - - - 1 hour
Physical Education - - - - - 1 hour	
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SOPHOMORE YEAR

First Semester	Second Semester
Foreign Language or Electives 5 hours	Foreign Language and/or Electives - - - - - 5 hours
U. S. Government - - - - - 3 hours	Economics - - - - - 5 hours
English Literature - - - - - 3 hours	English Literature - - - - - 3 hours
American History - - - - - 5 hours	Survey of Journalism - - - - - 1 hour
Physical Education - - - - - 1 hour	Physical Education - - - - - 1 hour
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NOTE: A student following this curriculum is expected to work on the school newspaper, THE CHART.

LAW CURRICULUM**Degree: Associate in Arts****1. Courses required for the Law Curriculum:**

English 1 and 2	6 semester hours
Public Speaking	3 semester hours
Science	5 semester hours
Mathematics	5 semester hours
American History	5 semester hours
United States and State Government	5 semester hours
Accounting	3 semester hours
Psychology or Sociology	3 semester hours
Foreign Language	10 semester hours
Electives	15 semester hours
Physical Education	4 semester hours

2. Suggested order of study:**FRESHMAN YEAR**

First Semester		Second Semester	
English 1 - - - - -	3 hours	English 2 - - - - -	3 hours
Foreign Language or		Foreign Language - - - - -	5 hours
American History - - - - -	5 hours	Algebra 3 or	
Government - - - - -	3 hours	Algebra and Trigonometry -	5 hours
Science - - - - -	5 hours	Psychology or Sociology - - -	3 hours
Physical Education - - - - -	1 hour	Physical Education - - - - -	1 hour
	<hr/> 17		<hr/> 17

SOPHOMORE YEAR

First Semester		Second Semester	
Exposition - - - - -	3 hours	Economics - - - - -	5 hours
Accounting 1 - - - - -	3 hours	Modern European History	
Foreign Language or		or English Literature - - -	3 hours
American History - - - - -	5 hours	Public Speaking - - - - -	3 hours
Modern European History		Science - - - - -	5 hours
or English Literature - - -	3 hours	Physical Education - - - - -	1 hour
Government - - - - -	2 hours		
Physical Education - - - - -	1 hour		
	<hr/> 17		<hr/> 17

Degree: Associate in Arts

1. Courses required for the Medical Curriculum:

English 1 and 2 -----	6 semester hours
*Foreign Language (in 1 Language) -	10 semester hours
Inorganic Chemistry -----	8 semester hours
Qualitative Analysis -----	3 semester hours
Zoology -----	5 semester hours
Anatomy and Physiology -----	5 semester hours
Physics -----	8 semester hours
American History or Government ---	5 semester hours
Electives -----	10 semester hours
Physical Education -----	4 semester hours

*Not required if the particular school our candidate plans to attend does not require a foreign language.

2. Suggested order of study:

FRESHMAN YEAR

First Semester		Second Semester	
Inorganic Chemistry 1 - - -	5 hours	Inorganic Chemistry 2 - - -	3 hours
Zoology - - - - -	5 hours	Qualitative Analysis - - -	3 hours
Algebra and Trigonometry -	5 hours	Anatomy and Physiology - -	5 hours
Physical Education - - - -	1 hour	Foreign Language or	
		American History - - -	5 hours
		Physical Education - - - -	1 hour
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	16		17

SOPHOMORE YEAR

First Semester		Second Semester	
English 1 - - - - -	3 hours	English 2 - - - - -	3 hours
Foreign Language - - - -	5 hours	Foreign Language or	
Physics 1 - - - - -	5 hours	American History - - - -	5 hours
Quantitative Analysis - - -	5 hours	Physics 2 - - - - -	3 hours
Physical Education - - - -	1 hour	Psychology or	
		English Literature - - -	3 hours
		Physical Education - - - -	1 hour
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	19		15

MEDICAL TECHNOLOGIST CURRICULUM**Degree: Associate in Science****1. Courses required for the Medical Technologist Curriculum:**

English 1 and 2	6 semester hours
Inorganic Chemistry	8 semester hours
Quantitative Analysis	5 semester hours
Qualitative Analysis	3 semester hours
Zoology	5 semester hours
Botany	5 semester hours
Anatomy and Physiology	5 semester hours
Electives	23 semester hours
Physical Education	4 semester hours

2. Suggested Order of Study:**FRESHMAN YEAR**

First Semester		Second Semester	
English 1 - - - - -	3 hours	English 2 - - - - -	3 hours
Inorganic Chemistry 1 - - -	5 hours	Inorganic Chemistry 2 - -	3 hours
Algebra - - - - -	3 or 5 hours	Qualitative Analysis - - -	3 hours
Typewriting - - - - -	3 hours	Botany - - - - -	5 hours
Physical Education - - - -	1 hour	Speech - - - - -	3 or 2 hours
		Physical Education - - - -	1 hour
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17		17	

SOPHOMORE YEAR

First Semester		Second Semester	
Quantitative Analysis - - -	5 hours	Anatomy and Physiology - -	5 hours
Zoology - - - - -	5 hours	Physics 2 - - - - -	3 hours
Physics - - - - -	5 hours	Psychology - - - - -	3 hours
Physical Education - - - -	1 hour	American History or Gov't -	5 hours
		Physical Education - - - -	1 hour
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16		17	

NURSING CURRICULUM**Degree: Associate in Arts****1. Courses required for the Nursing Curriculum:**

English 1 and 2	6 semester hours
English Literature	6 semester hours
Inorganic Chemistry	8 semester hours
Zoology	5 semester hours
General Sociology	3 semester hours
General Psychology	3 semester hours
U. S. and State Government or American History	5 semester hours
Psychology of Personal Adjustment ..	3 semester hours
Electives in Arts and Science Courses	21 semester hours
Physical Education	4 semester hours

2. Suggested Order of Study:**FRESHMAN YEAR**

First Semester		Second Semester	
English 1 - - - - -	3 hours	English 2 - - - - -	3 hours
Inorganic Chemistry 1 - - -	5 hours	Inorganic Chemistry 2 - - -	3 hours
General Psychology - - -	3 hours	U. S. and State Government or Electives - - - - -	5 hours
American History or Electives - - - - -	5 hours	Electives - - - - -	5 hours
Physical Education - - - -	1 hour	Physical Education - - - -	1 hour
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17		17	

SOPHOMORE YEAR

First Semester		Second Semester	
Zoology - - - - -	5 hours	Anatomy and Physiology - -	5 hours
English Literature - - - -	3 hours	English Literature - - - -	3 hours
General Sociology - - - -	3 hours	Psych. of Pers. Adjust. - -	3 hours
Electives - - - - -	5 hours	Electives - - - - -	5 hours
Physical Education - - - -	1 hour	Physical Education - - - -	1 hour
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17		17	

OPTOMETRY CURRICULUM

Degree: Associate in Arts

1. Courses required for the Optometry Curriculum:

English 1 and 2	6 semester hours
English Literature	3 semester hours
Algebra and Trigonometry	5 semester hours
U. S. and State Government or American History	5 semester hours
Zoology	5 semester hours
General Inorganic Chemistry	8 semester hours
Physics	8 semester hours
General Psychology	3 semester hours
Electives	17 semester hours
Physical Education	4 semester hours

2. Suggested Order of Study:

FRESHMAN YEAR

First Semester		Second Semester	
English 1 - - - - -	3 hours	English 2 - - - - -	3 hours
Algebra and Trigonometry -	5 hours	Inorganic Chemistry - - -	3 hours
Inorganic Chemistry - - -	5 hours	American History - - - -	5 hours
General Psychology - - -	3 hours	Electives - - - - -	5 hours
Physical Education - - - -	1 hour	Physical Education - - - -	1 hour
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17		17	

SOPHOMORE YEAR

First Semester		Second Semester	
English Literature - - - - -	3 hours	U. S. and State Government -	5 hours
Physics 1 - - - - -	5 hours	Sociology - - - - -	3 hours
Zoology - - - - -	5 hours	Physics 2 - - - - -	3 hours
Electives - - - - -	2 hours	Electives - - - - -	5 hours
Physical Education - - - -	1 hour	Physical Education - - - -	1 hour
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16		17	

PHARMACY CURRICULUM**Degree: Associate in Arts****1. Courses required for the Pharmacy Curriculum:**

English 1 and 2	6 semester hours
Algebra and Trigonometry	5 semester hours
American History or Government ..	5 semester hours
Zoology	5 semester hours
Inorganic Chemistry	8 semester hours
Physics	8 semester hours
Accounting	3 semester hours
Botany	5 semester hours
Qualitative Analysis	3 semester hours
Economics	5 semester hours
Quantitative Analysis	5 semester hours
Electives	2 semester hours
Physical Education	4 semester hours

2. Suggested Order of Study:**FRESHMAN YEAR**

First Semester		Second Semester	
Algebra and Trigonometry	- 5 hours	American History	- - - 5 hours
Inorganic Chemistry	- - 5 hours	Inorganic Chemistry	- - - 3 hours
Zoology	- - - - 5 hours	Qualitative Analysis	- - - 3 hours
Physical Education	- - - 1 hour	Botany	- - - - 5 hours
		Physical Education	- - - 1 hour
	<hr/> 16		<hr/> 17

SOPHOMORE YEAR

First Semester		Second Semester	
English 1	- - - - - 3 hours	English 2	- - - - - 3 hours
Physics 1	- - - - - 5 hours	Economics	- - - - - 5 hours
Quantitative Analysis	- - - 5 hours	Physics 2	- - - - - 3 hours
Accounting 1	- - - - - 3 hours	Speech	- - - - - 3 or 2 hours
Physical Education	- - - 1 hour	Electives	- - - - - 2 hours
		Physical Education	- - - 1 hour
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PHYSICAL EDUCATION CURRICULUM

Degree: Associate in Arts

1. Courses required for the Physical Education Curriculum:

English 1 and 2	6 semester hours
Speech	3 or 2 semester hours
Mathematics	3 semester hours
Literature	3 semester hours
Science	10 semester hours
Hygiene	2 semester hours
American History	5 semester hours
United States and State Government	5 semester hours
Recreational Activities	3 semester hours
Problems in Intramural Sports	3 semester hours
Electives	18 semester hours
Physical Education	4 semester hours

2. Suggested Order of Study:

FRESHMAN YEAR

First Semester	Second Semester
English 1 - - - - - 3 hours	English 2 - - - - - 3 hours
American History or Physical Science - - - 5 hours	American History or Physical Science - - - 5 hours
General Psychology - - - 3 hours	Recreational Activities - - - 3 hours
Problems in Intramural Sports 3 hours	Mathematics - - - - - 3 hours
Hygiene - - - - - 2 hours	Elective - - - - - 2 hours
Physical Education - - - - 1 hour	Physical Education - - - - 1 hour
17	17

SOPHOMORE YEAR

First Semester	Second Semester
Zoology - - - - - 5 hours	Anatomy and Physiology - - 5 hours
Speech - - - - - 3 or 2 hours	Art Appreciation - - - 3 hours
United States Government - 3 hours	Music Masterpieces - - - 2 hours
English Literature - - - 3 hours	State Government - - - 2 hours
Rules and Officiating - - - 2 hours	Scouting and Boys' Work - - 2 hours
Physical Education - - - - 1 hour	Educational Psychology - - 3 hours
	Physical Education - - - - 1 hour
16	18

SOCIAL WORK CURRICULUM**Degree: Associate in Arts****1. Courses required for the Social Work Curriculum:**

English 1 and 2	6 semester hours
Speech	3 or 2 semester hours
Literature	4 semester hours
Biological Science	5 semester hours
Economics	5 semester hours
U. S. Government and State Gov't.	5 semester hours
Psychology	3 semester hours
Sociology	3 semester hours
American History	5 semester hours
Electives in Arts and Science Courses	22 semester hours
Physical Education	4 semester hours

2. Suggested Order of Study:**FRESHMAN YEAR**

First Semester		Second Semester	
English 1	3 hours	English 2	3 hours
Science or Elective	5 hours	Science or Elective	5 hours
Sociology	3 hours	U. S. and State Government	5 hours
American History	5 hours	Speech	3 or 2 hours
Physical Education	1 hour	Physical Education	1 hour
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SOPHOMORE YEAR

First Semester		Second Semester	
Literature 3 or 11	2-3 hours	Economics	5 hours
Psychology	3 hours	Literature 4 or 12	2-3 hours
Electives	10 hours	Electives	8 hours
Physical Education	1 hour	Physical Education	1 hour
<hr/> 16 or 17		<hr/> 16 or 17	

TEACHER-TRAINING CURRICULUM**Degree: Associate in Arts**

1. Courses required for the Elementary Teacher-Training Curriculum:

English 1 and 2	6 semester hours
English Lit. or Foreign Language	6 semester hours
Speech	3 or 2 semester hours
American History	5 semester hours
United States and State Government	5 semester hours
Biological Science	5 semester hours
Physical Science, Chemistry or Physics	5 semester hours
General Psychology	3 semester hours
Geography	3 semester hours
Introduction to Education	2 semester hours
Electives	18 semester hours
Physical Education	4 semester hours

2. Suggested Order of Study:

FRESHMAN YEAR

First Semester		Second Semester	
English 1 - - - - -	3 hours	English 2 - - - - -	3 hours
Physical Science or American History - - - - -	5 hours	American History or Physical Science - - - - -	5 hours
Introduction to Education - - - - -	2 hours	*Introduction to Music - - - - -	2 hours
Geography - - - - -	3 hours	*Music Masterpieces - - - - -	2 hours
Hygiene - - - - -	2 hours	Algebra - - - - -	5 hours
Physical Education - - - - -	1 hour	Physical Education - - - - -	1 hour
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* Not required if student has good background in Music
Recommended elective — Art Appreciation.

SOPHOMORE YEAR

First Semester		Second Semester	
English Literature - - - - -	3 hours	English Literature - - - - -	3 hours
Biological Science or Government - - - - -	5 hours	Government or Biological Science - - - - -	5 hours
Art Education - - - - -	3 hours	Educational Psychology - - - - -	3 hours
Public School Music - - - - -	2 hours	Children's Literature - - - - -	2 hours
General Psychology - - - - -	3 hours	Speech - - - - -	3 or 2 hours
Physical Education - - - - -	1 hour	Physical Education - - - - -	1 hour
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SECONDARY EDUCATION CURRICULUM

Degree: Associate in Arts
Associate in Science

1. Courses required for the Secondary Education Curriculum:

English 1 and 2	6 semester hours
Literature or Foreign Language	5 or 6 semester hours
Mathematics	3 or 5 semester hours
Fine Arts Appreciation	2 or 3 semester hours
Biological Science	5 semester hours
Fundamentals of Physical Science, Chemistry or Physics	5 semester hours
American History and Government or Economics	10 semester hours
General Psychology	3 semester hours
Electives	21 or 17 semester hours
Physical Education	4 semester hours

2. Suggested order of study:

FRESHMAN YEAR

First Semester		Second Semester	
English 1	3 hours	English 2	3 hours
Science	5 hours	Science	5 hours
Mathematics or History	5 hours	Mathematics or History	5 hours
General Psychology	3 hours	Speech	3 or 2 hours
Physical Education	1 hour	Physical Education	1 hour
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SOPHOMORE YEAR

First Semester		Second Semester	
English Literature	3 hours	English Literature	3 hours
Fine Arts Appreciation	3 hours	Government or Economics	5 hours
Electives	9 hours	Educational Psychology	3 hours
Physical Education	1 hour	Electives	4 hours
		Physical Education	1 hour
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SECTION III

EXPLANATION

Definition of Semester Hours: The hour, which is the unit of credit given in the College, is the equivalent of a subject pursued one period per week for one semester of approximately eighteen weeks. Thus, a course valued at two semester hours' credit will normally meet two hours per week for one semester.

Course Numbers: Each course has been given a number which follows the name of the course. The small letters indicate the semester or semesters in which the course is usually offered: "f" designates a course offered in the fall semester; "w," the winter semester.

Technical Education Courses (Terminal):
See Section IV.

ARTS AND SCIENCE

1. ENGLISH AND SPEECH

a. ENGLISH

English 1 (f and w). Provides instruction in grammatical and rhetorical elements of composition. Students who show exceptional ability may be permitted to substitute English 7a for their English 1 requirement. 3 hours.

English 2 (w). Prerequisite, English 1. Develops reading comprehension through an introduction to types of literature and offers practice in the writing of clear, forceful exposition. 3 hours.

English 7a (f). A special composition course for freshmen who demonstrate exceptional proficiency in the mechanics and effectiveness of expression in English. 3 hours.

Exposition 7 (f). Prerequisite, English 1 and 2, or their equivalent. A study of the techniques of factual writing and the writing of non-fiction. Recommended for all students, especially for those entering professional schools. 3 hours.

Survey of Journalism (f and w). No prerequisite. Open to freshmen and sophomores who want an opportunity to try various types of work in the field of journalism and who want to become active on the staff of the college paper. May be repeated for credit. 1 hour.

Masterpieces of Literature 3 (f). No prerequisite. Open to freshmen and sophomores. Includes the reading in translation of representative works from Homer, Aeschylus, Sophocles, Euripides, Plato, Virgil, Herodotus, Aristotle, Moliere, Shakespeare, and Ibsen. 2 hours.

Masterpieces of Literature 4 (w). No prerequisite. Open to freshmen and sophomores. Includes the reading and discussion of significant prose and poetry from twentieth century English and American authors. 2 hours.

English Literature 11 (f). Prerequisite, sophomore standing. A survey course in English literature from Beowulf to the Romantic Movement. 3 hours.

English Literature 12 (w). Prerequisite, sophomore standing. A survey course in English literature from the Romantic Movement to the present. 3 hours.

Children's Literature 13 (w). Prerequisite English 1. Survey of literature taught in elementary schools. 2 hours.

Business Communications 2 (w). (See COMMERCE).

b. SPEECH

Fundamentals of Speech 5 (f and w). A practical course designed to improve or to develop self-expression. Class projects involve speaking situations that the student might conceivably encounter outside the classroom on a business, professional, social, or economic level. Emphasis is upon delivery rather than substance. Not open to students who have credit for one unit of speech in high school. 2 hours.

Introduction to the Theatre 6 (f). Survey course in theatre history, stressing the contributions of playwrights, actors and social trends of all periods as contributing factors to the contemporary theatre. 3 hours.

Dramatic Interpretation 7 (f). The study and application of the principles and techniques of oral reading. The course includes an analysis of different types of prose and poetry for platform presentation. 3 hours.

Play Production 9 (w). A course dealing with the techniques and problems of mounting a play. The course includes a basic analysis of the construction of the drama, along with the basic elements of costume, stagecraft and make-up. Each student will serve in some capacity of back-stage work on the current production. 3 hours.

Beginning Acting 11 (f). A basic course in acting; character analysis and the creation of a role; stage movement and basic techniques. Attention given to individual and group rehearsals. Laboratory work includes taking part in some phase of the major production. 3 hours.

Beginning Directing 13 (w). Basic principles, skills, and techniques involved in the direction of plays. An analysis and study with practical demonstrations and class exercises of these fundamental principles of play directing. 3 hours.

Public Speaking 15 (f). Prerequisite, Fundamentals of Speech 5, or the approval of the instructor. Practice in preparation and delivery of impromptu, extemporaneous manuscript and memorized speeches. 3 hours.

Stagecraft (f and w). A laboratory and lecture course devoted to the mounting of the major productions. The course may be repeated for an accumulation of 4 hours. 1 hour.

2. FOREIGN LANGUAGE

a. French

Elementary French 1 (f). Conversation practice and vocabulary building. Pronunciation proficiency, essentials of grammar. Graded readings. 5 hours.

Intermediate French 2 (w). Prerequisite, Elementary French 1, or two years high school French. Special emphasis on conversation and vocabulary building. Reading of stories and plays. 5 hours.

Advanced French 3 (f). Prerequisite, Intermediate French 2. Advanced conversation and reading. Individual reading and reports. 3 hours.

b. German

Elementary German 1 (w). Intensive practice in conversation to further proficiency in speaking the language. Vocabulary building and writing. Brief study of the essentials of grammar. 5 hours.

Intermediate German 2 (f). Prerequisite, German 1. Emphasis on the spoken idiom. Reading of stories and plays. Individual reading and reports. 5 hours.

Advanced German 3 (w). Prerequisite, German 2. Emphasis on conversation. Advanced reading and reports. Composition. 3 hours.

c. Spanish

Elementary Spanish 1 (w). Conversation and vocabulary building are most important. Pronunciation proficiency and grammar essentials. 5 hours.

Intermediate Spanish 2 (f). Prerequisite, Elementary Spanish 1, or two years of high school Spanish. Conversation is stressed. Intermediate reading and composition. 5 hours.

Advanced Spanish 3 (w). Prerequisite, Intermediate Spanish 2, or three years of high school Spanish. Conversation is stressed. Rapid reading of Spanish masterpieces. Individual reading and reports. 3 hours.

3. MATHEMATICS

Plane Geometry 0 (f). A short course in plane Euclidean geometry. No credit for engineering students. 3 hours.

Solid Geometry 00 (w). A short course in solid geometry. No credit for engineering students. 2 hours.

Algebra 1 (f). A basic course for students who are deficient in mathematics. No credit for students who have credit for 1 or more units of high school algebra. 3 hours.

Trigonometry 2 (w). Prerequisite, $1\frac{1}{2}$ units of high school algebra, Algebra 1 or Algebra 3. Study of trigonometric functions and their applications. (2 hours' credit for students offering trigonometry for entrance.) 3 hours.

Algebra 3 (w). Prerequisite, 1 unit of high school algebra. (Not open to those who have 2 units of algebra.) A course for students who do not expect to study mathematics after the freshman year. 5 hours.

Algebra and Trigonometry 5 (f and w). Prerequisite, satisfactory score on departmental placement test and 3 units in high school mathematics. Students not meeting these requirements must earn a score of "M" in Algebra 1, or 3, or Modern Mathematics 6, or have the consent of the instructor before enrolling. (Many Colleges of Engineering do not allow credit for the course, Algebra and Trigonometry). 5 hours.

Modern Mathematics 6 (f and w). Prerequisite, One year of high school mathematics or consent of the instructor. Basic elements of set theory and mathematical logic with applications to algebra and geometry. Also, a survey of several modern topics. 3 hours.

Slide Rule 8 (f and w). Prerequisite, trigonometry or concurrent registration in trigonometry. A laboratory course in the use of a log-log rule. A student may be excused if he passes a proficiency test. Meets two hours a week. 1 hour.

Analytic Geometry and Calculus 14 (w). Prerequisite, Algebra and Trigonometry 5, with a grade of "M", or 4 units of high school mathematics and a satisfactory score on departmental placement test. Differentiation and integration of algebraic functions. Conic sections. 5 hours.

Analytic Geometry and Calculus 14a (f). Prerequisite, same as Analytic Geometry and Calculus 14. Includes approximately half of course 14, and a brief review of algebra and trigonometry. Meets 3 hours per week. 2 hours.

Analytic Geometry and Calculus 14b (w). Prerequisite, Analytic Geometry and Calculus 14a. Courses 14a and 14b include all topics in Analytic Geometry and Calculus 14. 3 hours.

Analytic Geometry and Calculus 15 (f). Prerequisite, Analytic Geometry and Calculus 14, or 14a and 14b. Differentiation and integration of transcendental functions, polar coordinates, vectors, and applications. 5 hours.

Analytic Geometry and Calculus 16 (w). Prerequisite, Analytic Geometry and Calculus 15. Solid analytic geometry, infinite series, multiple integrals, and introduction to differential equations. 5 hours.

Plane Surveying 9 (f and w). Prerequisite, trigonometry. An introductory course. A study of adjustment and use of surveyor's compass, levels, plane table and alidade, and transit. Field work in chaining, profile and differential leveling, traverse, land survey, etc. 2 hours.

Statics 13 (w). Prerequisites, Physics 3 and concurrent registration in Analytic Geometry and Calculus 16. The principles of mechanics as applied to problems of engineering in which the structures under consideration are in static equilibrium. 3 hours.

4. MECHANICAL DRAWING

Engineering Drawing 1 (f). Study of use of drawing instruments, lettering, technical sketching, tracing and blue printing. A. S. A. standards are basis for drafting conventions. 2 hours.

Descriptive Geometry 2 (w). Prerequisite, Engineering Drawing 1. Practical applications of principles to problems of geology and mining, and mechanical and architectural engineering. 2 hours.

Engineering Drawing 3 (w). Prerequisite, Engineering Drawing 1. Screw thread, bolts and nuts, detail and assembly, gear and cam design, topographical and pattern drafting. 2 hours.

Architectural Drawing 4 (w). Prerequisite, Engineering Drawing 1. The fundamental principles of house planning, including materials of construction and room arrangements. Plans will be drawn of some suitable building. 2 hours.

5. PSYCHOLOGY

General Psychology 1 (f and w). Principles which control individual human behavior. 3 hours.

Educational Psychology 2 (w). Prerequisite, General Psychology 1. Open to fourth-semester education majors only. A general course designed to acquaint the student with some of the scientific psychological trends. 3 hours.

Applied Psychology 3 (f or w). Prerequisite, General Psychology. The application of psychological principles to human relations, personality studies, and certain professional and non-professional occupations. 3 hours.

The Psychology of Personal Adjustment 5 (f or w). Prerequisite, General Psychology 1 or the consent of the instructor. Emphasis on certain psychological principles that, if applied, would result in optimum emotional maturity. 3 hours.

6. SCIENCE

a. BIOLOGICAL SCIENCE

General Biology 1 (f). A cultural course in the field of biology planned to give the student basic concepts in the fundamentals of biology and the application of these concepts to modern living. A one-semester, five-hour laboratory course consisting of three one-hour lecture periods and two two-hour laboratory periods per week. Not recommended for students who plan to take additional work in the biological sciences. 5 hours.

General Zoology 1 (f). A detailed study of a vertebrate animal, followed by a general survey of the animal groups and studies of representatives of these groups. 5 hours.

General Botany 2 (w). A liberal education course emphasizing general biological principles, especially as applied to plants, consisting of a detailed study of structure, function, and life cycle of selected typical seed plants plus a survey of the Plant Kingdom and its evolution. A one-semester, five-hour laboratory course consisting of three one-hour lecture periods and two two-hour laboratory periods per week. 5 hours.

Anatomy and Physiology 5 (w). Prerequisite, General Zoology 1 with minimum grade of "M." Includes study of structure of the cell, skeletal and muscular and nervous systems, and introduction to embryology. 5 hours.

b. PHYSICAL SCIENCE

General Inorganic Chemistry 1 (f and w). Introduction to laws and theories of chemistry and to laboratory procedures. Three 1-hour lectures per week and two 2-hour laboratory periods per week. 5 hours

General Inorganic Chemistry 2 (w). Prerequisite, General Inorganic Chemistry 1 with a grade of "M." Emphasis on oxidation-reduction reactions, applications of the law of chemical equilibrium, and properties of metals. 3 hours.

Qualitative Analysis 3 (w). Prerequisites, General Inorganic Chemistry, 5 hours, and should be taken simultaneously with Chemistry 2. Identification of metals and the more important anions. Three two-hour laboratory periods and one one-hour lecture per week. 3 hours.

Quantitative Analysis 4 (f). Prerequisites, General Inorganic Chemistry 1 and 2. Includes both volumetric and gravimetric analysis. Five two-hour laboratory periods and one one-hour lecture per week. 5 hours.

Elementary Organic Chemistry 5 (w). Prerequisite, 8 hours of college chemistry. An elementary course covering both aliphatic and aromatic compounds. Three 1-hour lectures per week and two 3-hour laboratories per week. 5 hours.

Fundamentals of Physical Science 1 (f and w). A cultural course in the field of physical science planned to give the student basic concepts in the fundamentals of chemistry and physics and the application of science to modern living. Lecture, laboratory and demonstration. Not recommended for students who plan to take additional work in the physical sciences. 5 hours.

Elementary College Physics 1 (f). Prerequisite, Plane Geometry. Includes study of mechanics, heat and sound. 5 hours.

Elementary College Physics 2 (w). Prerequisite, Elementary College Physics 1. Includes study of electricity and light. Courses 1 and 2 designed for medical students. 3 hours.

General College Physics 3 (f). Prerequisite, ten hours of college mathematics. Analytic Geometry and Calculus 15 should be taken concurrently. Includes study of mechanics, sound and heat. Courses 3 and 4 are for pre-engineering students. 5 hours.

General College Physics 4 (w). Prerequisite, General College Physics 3. Study of electricity and light, followed by introduction to modern applications of physics. 5 hours.

7. SOCIAL SCIENCE

a. Geography

Introduction to Geography 1 (f). A study of major climatic regions. Special emphasis is placed upon products of these regions; their importance in international trade; and their effects on populations. 3 hours.

b. History

Modern European History 3 (f). Study of growth of nations, and cultural and political developments from 1492 to 1815. 3 hours.

Modern European History 4 (w). Study of development in Europe from the Congress of Vienna to the present. 3 hours.

American History 5 (f and w). The foundations of American nationality, with special emphasis on the European heritage, planting and development of colonies in America, evolution of colonial and national institutions, the slavery question and the war between the states; the post-war period with emphasis on the development of labor organizations and business enterprise. 5 hours.

c. Political Science

General Economics 8 (w). Prerequisite, Sophomore standing. An introduction of the American economy. A study of the functioning of the competitive system, organization of business and labor, the economic role of government, the problems of production and consumption, money and banking, price determination, international trade, business cycles, social movements and social legislation and economic welfare. 5 hours.

State Government 10 (f and w). The subject matter dealing with state and local governments includes the following: a survey of some political ideologies, a study of constitutional structures; stress on popular government; examination of services and activities; and an analysis of selected major problems. 2 hours.

United States Government 11 (f and w). The subject matter is organized on principles and practices of government. Starting with the formation and structure of the federal government, successively, civil rights and responsibilities, legislature and public policy, administration, adjudication, and services and activities. 3 hours.

International Relations 12 (w). A general introductory course which includes the meaning of sovereignty, the evolution of the modern state system; factors which affect the power of a state, such as raw materials, political institutions, industrial, commercial and financial strength; the international positions and foreign policies of the great powers; history of recent international relations building for a more stable world. 3 hours.

d. Sociology

General Sociology 1 (f and w). A survey of the development of man, human associations and social institutions, with a descriptive analysis of modern man and his socially determined activities and cultural growth. 3 hours.

The Family 2 (w). Study of factors which make or mar homes, and of ways to promote better homemaking. 3 hours.

Introduction to Social Work 3 (f or w). The purpose of this course is to acquaint the student with social welfare programs and the development of services. The course will include professional opportunities in social work. Tax supported and voluntarily financed health and welfare programs will be considered. 3 hours.

COMMERCE

1. GENERAL BUSINESS

Accounting 1 (f). Fundamental principles as applied to modern business practice, including theory of debits and credits, journals, ledgers, balance sheets, and profit and loss statements. 3 hours.

Accounting 11 (w). Prerequisite, Accounting 1, or high school bookkeeping, or special permission of instructor. A study of various subjects, such as payrolls, insurance, depreciation, branch accounting, partnerships, and corporations. 3 hours.

Accounting 12 (f). Prerequisite, Accounting 11. Application of accounting principles to manufacturing statements, inventories, valuation accounts, and other special topics. 3 hours.

Accounting 23 (w). Prerequisite, Accounting 12 or special permission of instructor. Cost accounting and special subjects. 3 hours.

Business Communications 2 (w). Prerequisite, English 1. Provides for the study of the principles for writing effective business letters. Students get experience in writing various kinds of letters: sales, credit, collection, adjustment, application and others. 3 hours.

Business Arithmetic 7 (f). A review of the fundamentals process of arithmetic as applied to integers, fractions, and decimals, and their uses in percentage, interest, and simple business forms. It should be taken concurrently with Accounting 1. 3 hours.

Economics 8 (w). (See under Social Science.)

Introduction to Salesmanship 22 (f). An analysis of the techniques of personal, retail, and general selling. Selecting sales appeals, planning the approach, and the methods of effecting a favorable response. The objectives of the course are to develop skill in personal persuasion and to provide an introduction to modern selling activity. 3 hours.

Introduction to Business 24 (f). A study of the function, means of financing, and methods of controlling and managing a business. It affords assistance in choosing an area for specialization and provides a background for more specialized courses that follow. 3 hours.

Advertising 25 (w). A study of the general principles of advertising, with special emphasis upon its use by retail organizations, including mediums employed, sales promotion, layout construction, and copy writing. Principals of interior and window display for retail stores. 3 hours.

Business Law 30 (w). Prerequisite, sophomore standing except for terminal students. Study of common rules and legal principles used in business procedure. This includes a study of partnerships, corporations, contracts, negotiable instruments, agency, bailments, insurance, and sales as applied to business and cases involving these subjects. 3 hours.

2. SECRETARIAL

Shorthand 3 (f). (Beginning Shorthand). A theory course in which the principles of shorthand are studied. Vocabulary building is stressed. Not open to students who have completed one year of shorthand in high school, except by permission of the instructor. Typewriting should precede or parallel the course. 3 hours.

Shorthand 4 (w). (Intermediate Shorthand). Prerequisite, Shorthand 3 or any course in which the theory has been completed. This is a dictation course, with a review of theory, and special attention given to developing efficient transcription procedures. Dictation will range from 60 to 100 words per minute, depending upon the ability of the students. The minimum speed requirement by the end of the semester is to write at least 80 words per minute with 95% or more accuracy. 3 hours.

Shorthand 13 (f). (Advanced Shorthand). Prerequisite, Shorthand 4 or the ability to take dictation at 80 words per minute. The emphasis in this course is to develop accuracy in transcription as well as to increase the rate of transcription. Dictation will range from 80 to 140 words per minute. The minimum requirement by the end of the semester is at least 100 words per minute with 95% or more accuracy. 3 hours.

Shorthand 33 (w). (Advanced Shorthand) Prerequisite, Shorthand 13 or the ability to take dictation at 100 words per minute. This is a course for the development of expert stenographers. A great deal of emphasis is placed upon accuracy and rate of transcription, and production of mailable letters. Dictation will range from 100 words per minute to 160 words per minute. The minimum requirement by the end of the semester is at least 120 words per minute with at least 95% accuracy. A student who has taken 9 hours of shorthand and has earned a 120-word per minute certificate may be excused from this course. 3 hours.

Shorthand 33a (w). This course is for students who have had two years of high school shorthand and wish a third course in college. The minimum requirement by the end of the semester is 130 words per minute with 95% accuracy if the student has previously met the requirements of Shorthand 33. 3 hours.

Typewriting 5 (f). (Beginning Typewriting). The chief emphasis in this course is to learn to manipulate the typewriter efficiently. The development of speed is stressed so that the student will, upon completion of the course, have a fair rate which will be of use to him personally. A few simple letter styles are taught as well as manuscript writing and simple tabulation. 3 hours.

Typewriting 6 (w). (Intermediate Typewriting). Prerequisite, Typewriting 5 or a good knowledge of the keyboard. This is primarily a letter-writing course. All the styles of business and personal letters are studied and written. Efficient methods of writing more difficult manuscripts and tabulations are also studied. Minimum requirement for passing is the ability to type 40 words per minute for ten minutes within the 5-error limit. 3 hours.

Typewriting 15 (f). (Advanced Typewriting). Prerequisite, Typewriting 6 or the ability to write 40 words per minute for ten minutes and a knowledge of letter writing. Production of mailable letters, manuscripts, reports, addressing envelopes, etc., is emphasized. Complicated manuscripts, business reports, tabulations, form letters, and efficient use of multiple carbons are some of the materials which are studied. Minimum requirement for passing is the ability to write 50 words per minute for ten minutes within the 5-error limit. 3 hours.

Typewriting 16 (w). (Advanced Typewriting). Prerequisite, Typewriting 15 or the ability to write 50 words per minute for ten minutes. Legal typing is introduced, and business forms are the chief emphasis in this course. The use of office typing projects to accustom the student to office procedure is introduced the last part of the semester. Minimum passing requirement is 60 words per minute within the 5 error limit. 3 hours.

Secretarial Procedures 21 (w). Business ethics, secretarial duties common to all lines of business, such as handling mail, meeting callers, and using the telephone, etc. The student receives instructions in the use of present day filing systems and their application to the various types of business. This course is offered for sophomores in the General Business curriculum. Freshmen may be admitted by permission of the instructor. 3 hours.

Office Machines 20 (f and w). Prerequisite, Typewriting. A laboratory course in the operation of spirit and stencil duplicators; Ediphone transcribing machine; Comptometer and calculator. 3 hours.

Office Machines 35 (f). Prerequisite, Office Machines 20. A laboratory course continuing the work as set up for Office Machines 20, plus work on the posting machine. 3 hours.

EDUCATION

Introduction to Education 1 (f). A study of education as a profession. Description of training programs required to reach objectives. Analysis of individual aptitudes and vocational choices. 2 hours.

Children's Literature 13 (see under English).

FINE ARTS

1. ART

Art Composition 1 (f and w). Study of history, materials and methods of creative art. 3 hours.

Art Composition 2 (f and w). Prerequisite, Art Composition 1. Elementary training in drawing and color in relation to composition. 3 hours.

Art Composition 3 (f and w). Prerequisite, Art Composition 2. Study of pictorial organization. 3 hours.

Art Composition 4 (f and w). Prerequisite, Art Composition 3. Creative Art. 3 hours.

Art Education 5 (f). Study of history, materials and methods of creative art as used by elementary teachers. 3 hours.

Art Appreciation 7 (f and w). Art in everyday life for the consumer. 3 hours.

2. MUSIC

Introduction to Music 1 (f or w). A survey of the materials of music and the study of selected masterpieces from all fields of music literature. Not for music majors. Three periods per week. 2 hours.

Public School Music 5 (f or w). A survey of music in the American Schools, with emphasis on the techniques employed in the elementary grades. Recommended for music and education majors who may be asked to assist in grade school music. 2 hours.

Music Masterpieces 10 (f). Designed to enable one to understand music and its development. Study of selected masterpieces and their composers. Open to all students. Music majors may enroll for elective credit only. Two periods per week. 2 hours.

Music Masterpieces 11 (w). Designed to enable one to understand music and its development. Study of selected masterpieces and their composers. Open to all students. Music majors may enroll for elective credit only. Two periods per week. 2 hours.

Elementary Music Theory 3 (f). An intensive study of the basic materials of music developed through melodic, rhythmic and harmonic dictation, sight-singing, and keyboard and written harmony. Triads, their inversions and connections. 5 hours.

Elementary Music Theory 4 (w). Continuation of course 3, including seventh chords and their inversions. Non-harmonic tones. Intensive work in aural perception. 5 hours.

Advanced Music Theory 15 (f). Prerequisite, course 4. A study of altered chords and modulation. Composition in simple forms. Advanced work in aural perception and keyboard harmony. 3 hours.

Advanced Music Theory 16 (w). Continuation of course 15. Modal harmony. Introduction to contemporary techniques. Compositions for instrumental ensembles. Emphasis on keyboard sophomore standing. 3 hours.

History of Music 35 (f). General survey of musical development correlated with other cultural factors. Includes music from early times through the period of J. S. Bach. Prerequisite, sophomore standing. 3 hours.

History of Music 36 (w). Continuation of course 35, which is not necessarily a prerequisite though preferably so. From the time of Haydn to the present. 3 hours.

3. APPLIED MUSIC

A. Private instruction may be arranged for piano, organ, voice, and most orchestral instruments. Two-hours credit per semester may be granted for major study; one, for minor. Two 30-minute lessons per week or one 1-hour lesson per week required for major study, and one 30-minute lesson per week, for minor study. (Turn to Applied Music Curriculum.)

The term, major field, refers to the field of specialization, such as piano or voice. Minor field refers to a complementary field; for instance, voice majors should minor in piano. Courses in major field shall be numbered 112, 122, 212, 222. Courses in minor field shall be numbered 111, 121, 211, 221.

B. Band, glee clubs, chorus, and other vocal and instrumental ensembles are open to all students. Arrangement of the ensembles is made according to the personnel available. One-hour elective credit per semester for each activity is allowed to a maximum of eight hours. Music majors are expected to participate in one or more of the school music organizations.

HEALTH AND PHYSICAL EDUCATION

Play and Games 1 (w). Activities suitable for the playground, recreation centers, elementary and secondary schools. This course will not substitute for Physical Education. 2 hours.

Hygiene 3 (f and w.) Study of principles of personal and social hygiene and public health. 2 hours.

Problems in Intramural Sports 5 (f). Designed to teach men how to carry on a program of intramural and recreational activities. Study of the rules and practice of touch-football, six-man football, soccer, handball, wrestling, boxing, apparatus and tumbling. 3 hours.

Recreational Activities 6 (w). Study and practice of adult sports adaptable to junior and senior high school facilities and to recreational centers. Volleyball, badminton, tennis, speedball, flashball, golf, softball and baseball. 3 hours.

Rules and Officiating 11 (f). The rules of football and basketball and the mechanics of officiating these sports. 2 hours.

Scouting and Boys' Work 12 (w). Fundamental principles of the physical, mental and spiritual development of boys through the agency of various boys' clubs; how to conduct club meetings; the delinquent boy, program building and the principles of scouting; preparing teachers as Scout leaders. 2 hours.

REQUIRED COURSES

All men and women students are required to take courses in physical education throughout the first and second years.

1-2 Required Course, Freshmen Men (f and w). Two periods each week. The activities offered will be decided by the instructor. 1 hour each semester.

3-4 Required Course, Freshmen Women (f and w). Two periods each week. The activities offered will be decided by the instructor. 1 hour each semester.

5-6 Required Course, Sophomore Men (f and w). Two periods each week. A continuation of 1-2. 1 hour each semester.

7-8 Required Course, Sophomore Women (f and w). Two periods each week. A continuation of 3-4. 1 hour each semester.

SECTION IV

TECHNICAL EDUCATION DIVISION

The Technical Division of the Joplin Junior College is designed to help students prepare for responsible jobs in technical employment. Approximately half of the student's time will be spent in the major technical area of interest. The remainder of time is spent in technically-related and/or general education subjects that lead toward the development of a well-trained technical worker. In addition to the subjects that are taught to develop skills and give technical knowledge, general education courses are included to give the student a more thorough understanding of his duties and responsibilities as a citizen and technician.

The Guidance Department of the Joplin Junior College and the services of the Missouri State Employment Service will be combined to carefully select people who will profit most by technical training. Students who satisfactorily complete a Technical Curriculum may receive special assistance from the Missouri State Employment Service in locating satisfactory employment that will utilize their newly-attained skills and knowledge.

The Technical Division of the Joplin Junior College is housed in the Franklin Technical School, 13th and Pearl, where the technical shop skills are taught. General education subjects are taught as a part of the regular Joplin Junior College program on the main campus.

ADMISSIONS

An application may be made by submitting a high school transcript to the Director of the Technical Division. All applicants will be screened and tested by the Joplin Junior College and the Missouri State Employment Service.

Applicants above 20 years of age who are not high school graduates and have passed the General Educational Development tests may enter when they have passed the required tests and have satisfied the school that they will profit from the course. The Joplin Junior College Technical Division reserves the right to refuse any applicant who does not propose to use the training for entry into employment, and who does not have the necessary ability and background.

If the classes are full at the time the application is made, the applicant will be placed on the waiting list. If there is a sufficient number, another class will be organized.

ATTENDANCE

Regular attendance is required for satisfactory completion of work. Students who are not making satisfactory progress will be requested to withdraw after adequate counseling.

EXPENSES AND PAYMENTS

See page 20-21. No special laboratory or breakage fees are required.

TERMINAL CREDIT

All Technical courses taken at Franklin Technical School receive terminal junior college credit and apply toward the requirements for the Joplin Junior College Terminal Certificate.

REQUIREMENTS FOR GRADUATION

Upon completion of the prescribed courses as stated in the catalog, the student will be eligible for graduation.

EVENING CLASSES

Evening classes will be offered in any of the technical courses in which there is a sufficient number enrolled to justify a class.

ELECTRONIC TECHNOLOGY

The Electronic Technology is in an area having facilities for 20 students at one time in the laboratory and a class area for lectures and demonstrations. The equipment consists of the Philco Electronic Training Course, Oscilloscopes, Volt Meters, Ohm Meters, Signal Generators and Tube Testers and many pieces of circuit testing instruments.

ELECTRONIC TECHNOLOGY

Terminal Certificate

1. Courses required for Electronic Technology:

*Basic Technical Mathematics 110	-----	No. Credit
English 1 and Technical Report Writing 131	--	5 sem. hours
Technical Mathematics 111 or Algebra and Trigonometry 5	-----	3-5 sem. hours
Technical Mathematics 112 or Analytic Geometry and Calculus 14	-----	3-5 sem. hours
Technical Drafting or Engineering Drawing 1	-----	2-3 sem. hours
Technical Sheet Metal 170	-----	3 sem. hours
Technical Electronics Courses 141, 142, 143, 144, 145, 146, 147, 148, 149	-----	45 sem. hours
United States Government 11 and State Government 10	-----	5 sem. hours
Technical Science 190 or Elementary College Physics 1	-----	3-5 sem. hours
Research Report 191	-----	1 sem. hour
Physical Education	-----	4 sem. hours

*Basic Technical Mathematics is for students who do not have adequate mathematical background.

2. Suggested Order of Study:

FRESHMAN YEAR

First Semester		Second Semester	
Technical Mathematics 111	- 3 hours	Technical Mathematics 112	- 3 hours
or		or	
Algebra and Trigonometry 5	- 5 hours	Analytic Geometry and	
Technical Drafting 120	- - 3 hours	Calculus 14	- - - 5 hours
or		Technical Report Writing 131	2 hours
Engineering Drawing 1	- - 2 hours	Graphic Analysis 115	- - 3 hours
English 1	- - - - - 3 hours	Basic Electronics 142	- - 6 hours
Technical Sheet Metal 170	- 3 hours	Time Varying Circuits 143	- 3 hours
Electronics and Electrical		Physical Education	- - - 1 hour
Fundamentals 141	- - 6 hours		
Physical Education	- - - 1 hour		
	19-20		18-20

SOPHOMORE YEAR

First Semester		Second Semester	
Technical Science 190	- - 3 hours	Research Report 191	- - - 1 hours
or		State Government 10	- - - 2 hours
Elementary College Physics 1	5 hours	Ultra High Frequency and	
United States Government 11	3 hours	Microwaves 140	- - - 6 hours
Circuit Tracing 144	- - - 3 hours	Television Circuits 148	- - 3 hours
Electronic Circuit Design		Industrial Electronics 149	- 6 hours
and Analysis 145	- - 6 hours	Physical Education	- - - 1 hour
Transmitter Theory and			
Operation 146	- - - 6 hours		19
Physical Education	- - - - 1 hour		
	22-24		

MACHINE TECHNOLOGY

At Franklin Technical School, a completely modern-equipped industrial type drafting room is available with drafting machines, special drafting tables, and many industrial drafting aids. These make it possible for the student to develop skills on specialized or industrial-type equipment. The machine shop is recognized as one of the most modern school-equipped shops in the midwest. Sufficient numbers of industrial-type machines are available in the area of lathes, vertical mills, horizontal mills, shapers, drill presses, surface, interior and external machine grinders, and special machines such as radial drills, turrets, and profile machines to equip students with technical operational skills and information.

When the size of the class reaches 30 students, additional instructors will be added as needed.

MACHINE TECHNOLOGY

Terminal Certificates

1. Courses required for Machine Technology:

*Basic Technical Mathematics 110	-----	No Credit
English 1 and Technical Report Writing 131	5 sem. hours	
Technical Mathematics 111 or Algebra and		
Trigonometry 5	-----	3-5 sem. hours
Technical Mathematics 112 or Analytic		
Geometry and Calculus 14	-----	3-5 sem. hours
Technical Drafting 120 or Engineering		
Drawing 1	-----	2-3 sem. hours
Technical Machine Courses 161, 162, 163,		
164 and 122	-----	27 sem. hours
United States Government 11 and		
State Government 10	-----	5 sem. hours
Technical Science 190 or Elementary		
College Physics 1	-----	3-5 sem. hours
Research Report 191	-----	1 sem. hour
Technical Drafting 121	-----	3 sem. hours
Technical Welding 180	-----	3 sem. hours
Quality Control Methods 165	-----	3 sem. hours
Strength of Materials 166	-----	3 sem. hours
Production Planning and Process 167	-----	3 sem. hours
Physical Education	-----	4 sem. hours

*Basic Technical Mathematics is for students who do not have adequate mathematical background.

2. Suggested Order of Study:

FRESHMAN YEAR

First Semester		Second Semester	
Technical Mathematics 111	- 3 hours	Technical Mathematics 112	- 3 hours
or		or	
Algebra and Trigonometry 5	5 hours	Analytic Geometry and	
Technical Drafting 120	- - 3 hours	Calculus 14	- - - - 5 hours
or		Technical Report Writing 131	2 hours
Engineering Drawing 1	- - 2 hours	Graphic Analysis 115	- - 3 hours
English 1	- - - - 3 hours	Technical Machine Oper. 162	6 hours
Technical Sheet Metal 170	- 3 hours	Technical Drafting 121	- - 3 hours
Technical Machine Oper. 161	- 6 hours	Physical Education	- - - 1 hour
Physical Education	- - - 1 hour		
	19-20		18-20

SOPHOMORE YEAR

First Semester				Second Semester			
Technical Science 190	- -	3 hours		Research Report 191	- - -	1 hours	
or				State Government 10	- -	2 hours	
Elementary College Physics 1		5 hours		Technical Machine Oper. 164		6 hours	
Technical Welding 180	- -	3 hours		Technical Machine Design 122		3 hours	
United States Government 11		3 hours		Quality Control Methods 165		3 hours	
Technical Machine Oper. 163		6 hours		Production Planning and			
Strength of Materials 166	-	3 hours		Processes 167	- - - -	3 hours	
Physical Education	- - -	1 hour		Physical Education	- - -	1 hour	
<hr/>				<hr/>			
19-21				19			

COURSE DESCRIPTIONS

Basic Technical Mathematics 110 (f and w). A basic course for students who do not have credit in algebra and geometry. It cannot be substituted for Technical Mathematics 111. No Credit.

Technical Mathematics 111 (f and w). Review of basic mathematics, algebra, and the fundamental concepts of trigonometry; use of tables, solution of right triangles, with emphasis on application of mathematics to problems in electronics and mechanics. 3 hours.

Technical Mathematics 112 (w). Mathematics used in solving problems involving vectors and harmonic motion; complex rotation and vector algebra; graphic methods used in solving problems relating to slope and rate of slope change; some basic calculus, including limits, derivations, and integration. 3 hours.

Technical Drafting 120 (f). Designed for students with limited experience in drafting. Use of templates, drafting machines and fundamental practices; electrical circuit drawing terms, symbols and standards. One hour lecture, two 2-hour laboratory periods per week. 3 hours.

Technical Drafting 121 (w). Prerequisite, Technical Drafting 120 or Engineering Drawing 1. Application of drafting techniques in respect to tolerance; threads, fasteners and springs; working drawings; axonometric projection; oblique projection, gearing, cams and technical engineering graphics. Laboratory 6 hours per week. 3 hours.

Graphic Analysis 115 (w). Graphic representation and graphic analysis. Layout methods used in pattern and template work, graphs, charts, and plots with an introduction to descriptive geometry and graphic calculus. Lecture one hour and laboratory two hours per week. Prerequisites, Technical Drafting 120, and Technical Mathematics 111, or equivalent. 3 hours.

Technical Sheet Metal 170 (f). An introductory course required for all students in technical courses, designed to provide skills in use of tools and machines as applied to light metals; special emphasis on soldering and layout. One hour lecture and 5 hours laboratory per week. 3 hours.

Technical Welding 180 (f and w). Introductory course required of all metal technical students. Basic principles for oxy-acetylene welding, cutting and electric arc welding will be given. One hour lecture and five hours laboratory per week. 3 hours.

Technical Science 190 (f). Graphical and mathematical analysis of forces, laws of motion machines, mechanical power, fluid mechanics, and external conductivity. Course work is extremely practical in nature with the emphasis on applied problems. Lecture 3 hours, laboratory 3 hours per week. 3 hours.

Research Report (Special Problem) 191 (w). Individual assignment to develop apparatus of special interest to the student with the instructor's approval. Frequent conferences between student and adviser will serve to guide the student's progress and the preparation of his report. This course may consist of library research dealing with the field of electronics or mechanics. The report should follow an accepted form of presentation. Laboratory 6 hours. 1 hour.

Technical Report Writing 131 (w). Techniques of collecting and presenting scientific data, informal reports and formal reports. Forms and procedures for technical reports are studied and a pattern is established for all formal reports to be submitted in this and other courses. Prerequisite, English 1. 2 hours.

Electronics and Electrical Fundamentals 141 (f). Includes basic physics of the electron, electro units, and Ohm's Law, resistance combinations, meter connections, magnetism and magnetic circuits and electric power. Characteristics of electric conductors, inductance and capacitance. Lecture 3 hours and laboratory a minimum of 3 hours per week. 6 hours.

Basic Electronics Concepts and Circuits 142 (w). Introduction to the technical concepts of electronic components and circuits. Principles of vacuum tubes and transistors; tuned circuits and basic circuits for power supplies, detectors, amplifiers and oscillators; radio receivers, use of basic testing devices and measuring instruments. It is designed to follow Electronics and Electrical Fundamentals 141, and should be taken concurrently with Time Varying Circuits 143. Lecture 3 hours and laboratory a minimum of 3 hours per week. 6 hours.

Time Varying Circuits 143 (w). Characteristics of alternating current waves and time varying circuits; analyzing the behavior of alternating current components, phase and power

factor; power measurement under balanced and unbalanced conditions; application of vector algebra in the analysis of series and parallel combinations of impedance. Lecture 3 hours, laboratory 6 hours per week. 3 hours.

Circuit Tracing 144 (f). Study of layout and representation. Problems in circuit design involving switches, relays and electronic components. Concentration of schematic representation of electronic equipment apart from the specific schematic diagrams for purpose of analysis and study. Prerequisite, Basic Electronics Concepts and Circuits 142. Lecture 1 hour, laboratory 3 hours per week. 3 hours.

Electronics Circuit Design and Analysis 145 (f). Acoustics and electro-acoustic devices; sound recording, design and testing of voltage and power amplifiers; inverse feedback, transistor amplifiers, computer circuits. A composite course covering several applications of electronics. The units covered are common to many fields of electronics and should be considered basic to the needs of an electronic technician. Prerequisite, Basic Electronics Concepts and Circuits 142. Lecture 3 hours and laboratory 6 hours per week. 6 hours.

Transmitter Theory and Operation 146 (f). Amplitude modulation and frequency oscillators and power amplifiers, antennas, modulation and radio-frequency measurements. Requirements for Government radio-operator licenses; electromagnetic transmissions and communication application. Prerequisite, Basic Electronics Concepts and Circuits 142. Lecture 3 hours, laboratory 6 hours per week. 6 hours.

Television Circuits 148 (w). Principles of television transmission and reception, with emphasis on circuits for pulshaping that are used in other electronic applications; picture scanning, synchronization, video amplifiers, colored television and industrial closed-circuit systems. The emphasis throughout this course is on circuit analysis and the behavior of wave-shaping circuits and not on T V servicing. Prerequisite, Transmitter Theory and Operation 146. Lecture 3 hours, laboratory 3 hours per week. 3 hours.

Industrial Electronics 149 (w). Time constant and electronic timing circuits; photo electric controls; welder and motor controls; saturable reactors and magnetic amplifiers; synchro and servomechanisms; induction and dielectric heating; radiation detection; applications in the field of industrial control and automation; combination of electrical, electronic, magnetic and mechanical principles. Prerequisite, Basic Electronics Concepts and Circuits 142. Lecture 3 hours, laboratory 6 hours per week. 6 hours.

Technical Machine 161 (f). Principles underlying all metal cutting operations, measuring tools, and lathe tool grinding. The major portion of laboratory practice will be fundamental operation of the engine lathe. Vertical and radial drill press operation will be included. Lecture 3 hours laboratory 6 hours per week. 6 hours.

Technical Machine 162. (w). A continuation of technical information and laboratory experience; special skills in operation of the engine lathe, turret lathe operation; tooling and set up of actual production job. Prerequisite, Technical Machine 161, or qualifying previous machine experience. Lecture 3 hours, laboratory 9 hours per week. 6 hours.

Technical Machine 163 (f). Technical information in layout, planning process and its general application. Milling flat, curved and irregular surfaces, use of index head, and special gear calculation and cutting. Shaper set up and use will be offered. Prerequisite, Technical Machine 161 and 162, or qualifying previous machine experience. Lecture 3 hours, laboratory 9 hours per week. 6 hours.

Technical Machine 164 (w). Technical information pertaining to tool steels, materials and heat treatment of various metals. The laboratory will provide experiences on grinders, surfacers, cylindrical, internal grinders, grinding milling cutter and reamers. Lecture 3 hours, laboratory 6 hours per week. 6 hours.

Technical Machine Design 122 (f). A study of manufacturing processes as they affect the designer; tolerances and allowances, springs, cutting tools, welding fabrication; punch and die design; elementary jig and fixtures; gages and gage design; practical design of jigs and fixtures, cam design; and turret-lathe tooling. A selected design will be built in the machine shop by the designer. Lecture and laboratory 6 hours per week. Prerequisite, Technical Machine 162 or 163, Technical Drafting 121 or qualified previous experience. 3 hours.

Production Planning and Processes 167 (w). Use of the operation sheet as applied to machine manufacturing. Emphasis is placed on modern production and process engineering methods, and their application to management and production planning. A study of purchasing, production control systems, time study, and the use of electrical, mechanical, pneumatic and hydraulic controls to provide for automation. Lecture 3 hours, laboratory 3 hours. 3 hours.

Strength of Materials 166 (f). Important principles of mechanics used in strength of materials; center of gravity; stress and relationships; thin-walled cylinders and spheres; shear bending movements; deflection of simple beams; applied loads; columns stresses and fatigue strengths. Lecture 1 hour, laboratory 2 hours. 3 hours.

Quality Control Methods 165 (w). Study and observation of local plant quality control system. Problem of product quality and ways to improve quality practices; uses of measuring instruments and procedure check methods. Lecture 2 hours, laboratory and plant visitations 4 hours. 3 hours.

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